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The Journal of Ayurveda

or the Hindu System of Medicine

Vol. VI.] July, 1929. [No. 1.

EDITORS: Dr. GIRINDRANATH MUKERJEE, B.A., M.D., F.A.S.B., VISHAGACHARYYA.
Kaviraj SHIBNATH SEN, B.A., M.B., KAVIRATNA.

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London Office :—67, Fleet Street, E. C. 4.

original Brahmi folia of the Nighantus (Hydrocotyle Asiatica) grown on the banks of the Ganges and warns the public to beware of imitations which are prepared from Herpestis Monniera. The above Syrup is advertised as a cure for sharpening memory, Stammering, Hysteria, Epilepsy, Insanity and other mental derangements.

According to Ayurvedic System of Medicine, Vol. III. of N. N. Sen, Brahmi (Herpestis Monniera) is the drug used in preparing the Sastric Medicine, Brahmi Ghrita, which is used in Insanity and Epilepsy, and Mandukaparni (Hydrocotyle Asiatica) is the drug used for Leprosy and Elephantiasis. Dr. D. P. Sanyal in his Vegetable Drugs of India has described Brahmi (Hydrocotyle Asiatica) and he has not given any medicinal use of the drug in Insanity and Epilepsy. It is only used for Leprosy and Elephantiasis. He has not described the other drug Brahmi (Herpestris Monneira) in his Materia Medica.

I hope the readers will kindly contribute an article on the therapeutics, physical characters, etc. of the above two drugs stating precisely which of the two should be used in preparing Brahmi Ghrita or Syrup of Brahmi.

Reports of Societies, etc.

ANDHRA VAIDYA MANDALI.

The first meeting of the Andhra Vaidya Mandali took place at Bezwada, in the Ramamohan Ayurvedic College Buildings, on 28th July 1929, exactly at 2 P.M

In the absence of Ayurvedacharya N. Madhavamenon, Esq., President for the year, Mr. Ayurveda-bhushana Nori Ramasastry was elected President.

More than fifty members and well-learned Vaidyas attended the meeting, and nearly fifty members sent their opinions by post.

The following resolutions were passed unanimously :—

1 This meeting resolved to postpone the consideration of holding the 'Bhishak' examinations through the Andhra Vaidya Mandali, since no definite information has yet been received from the All India Ayurveda Mahamandal.

2. The following Vaidyas have been elected as members of the All India Mahamandal on behalf of Andhra Vaidya Mandal.

(1) Sjt. Ayurvedacharya N. Madhavamenon, A. M. A. C.
(2) ,, Vaidya Vidwan Chitti Narayanamurty Garu.
(3) ,, Ayurveda Bhushana M. Venkatasastry, A. M A. C.

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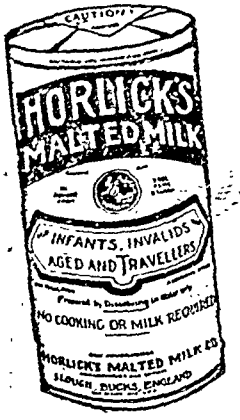

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In the small intestine, proteins nnd peptones are converted into aminacids, which have been described as the bricks of the body, that is, the material used by the body to repair waste and to add to its structure ; starches, maltose, milk-sugar and cane-sugar are broken down further to simpler sugars capable of being used by the body tissues ; and still more, fat is converted to glycerine and organic acids. In short, and apart from technicalities, digestion means a series of processes conducted some in the mouth, some in the stomach and some in the intestine, the purpose being to prepare the food substances for passage into the blood.

The success of these processes depends on the full exposure of the food to the action of the digestive juices Two agencies facilitate this result. One mastication divides and pulps the food so that the digestive juice easily gains access to all parts of it. The other, cooking, has much the same effect, in particular, in starchy foods it bursts the indigestible envelope of cellulose which encloses the starch granules and in animal food it loosens the binding material between the muscle fibres. Thus in each instance effective cooking is an aid to successful digestion, while at the same time, by developing flavour it promotes appetite.

Food which are not digested cannot be absorbed into the blood stream ; they are expelled from the body without having contributed to its nutrition. That is, it is not the amount digested and absorbed that has nutritive value. Hurried eating and improper mastication present the food to the digestive juices in a condition unfavourable to the action of these juices. The food, therefore, is not fully digested or absorbed ; its nutritive value is partly wasted, and sooner or later the symptoms of indigestion appear.

DIGESTIBLE AND INDIGESTIBLE FOODS

The time required to complete the digestive change varies considerably as between different foods ; some are digested quickly, others slowly. Again, the chemical composition of a food is not a complete index of its nutritive value. Many foods—for example, peas, beans and lentils—contain a considerable percentage of protein, even more than beef or mutton, but are not so valuable as foods because they are less digestible ; hence they yield only in part to the digestive juices and only in part contribute to body nutrition. These pulse proteins, moreover, are not of such good quality as those of meat, eggs and milk ; they lack certain important amino-acids or bricks that the latter contain. In constructing a diet, therefore, not only the quantity, but also the quality of the protein has to be considered.

A food is assumed by some to be digestible merely because it looks digestible. Dyspeptic persons sometimes eat soft starchy foods—rice pudding for example—under the impression that these are "light" and easily digestible. This is an error ; soft starchy foods are generally

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One such food, which has the additional advantage that it is easy to prepare, is rolled white oats.

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Doctors the world over prescribe this cereal for convalescence from almost all kinds of illness.

Medical News

—:o:—

THE EXAMINATION OF AYURVEDIC IRON BHASMAS

P. S. Varma, M. Sc., A I. I. Sc., Professor of Chemistry, Benares Hindu University Ayurvedic College observes :—

The bhasmas of iron are used extensively in Ayurveda and are said to be efficacious in asthma, intestinal worms, general debility, wasting diseases, colic pain, nervous disorders, jaundice and other blood diseases. There is a description of three kinds of iron in Ayurveda, viz, *mund loh* (native iron), *tikahan loh* (steel iron) and *kanti loh* (magnetic iron), out of which the latter two only are used for preparing Ayurvedic iron bhasmas.

The method of preparing the bhasmas consists in making the iron into the form of sheets, dipping these red-hot for seven times into the decoction of triphala mixed with cow's urine. Iron thus purified is kept in the decoction of triphala for seven days in sun-light, then taken out, washed with cold water, put again into the decoction of triphala and boiled for one day. The iron is then washed with cold water, ground very finely along with a number of drugs in an iron mortar and made into a rupee-shape, dried in the sun and then put into a clay crucible and fried for 24 hours in a fire made of cow-dung cakes and kept till it cools down. It is then taken out, ground with the juice of some more drugs and the same process repeated 10 to 100 times. The colour of such a preparation should become that of the cover of a tamarind seed with a peculiar shining lustre. Such a preparation is ready for use.

Under the auspices of the Ayurvedic College of the Benares Hindu University, the above bhasma was prepared under the guidance of Kaviraj Pratap Sinha Rasayanacharya, the Superintendent of the Ayurvedic Pharmacy and has been examined chemically in the Chemistry

THE JOURNAL OF AYURVEDA

Vol. VI.] July, 1929. [No. 1.

The Year Out

With the current issue, the Journal of Ayurveda enters into its sixth year after completing the fifth. We avail ourselves of this opportunity to congratulate our readers, contributors and well-wishers for the co-operation rendered to us in the conduct of the journal.

The past year has been a momentous one so far as progress of Ayurveda is concerned. The far off Crown Colony, Ceylon, has got an Ayurvedic College established and maintained by the Government. The name of the College is "College of Indigenous Medicine" which was opened by H. E. the Governor, Sir Herbert Stanley, at Colombo. It is manned by a every excellent staff with Capt. A. N. N. Panikker, Ayurveda-Bhusana, I.M.S (Retd.), M.B., Ch. B. (Edin.), M.R.C.S. (Eng.), L.R.C.P. (Lond.) as Principal. The College is no doubt in its infancy but we are confident that in course of time it will grow up to the status of a first class Medical Institution. It has already got a very good Library of Ayurvedic books and we had our share of supplying some books on Ayurveda and Journal of Ayurveda to the Library. We congratulate the Government of Ceylon and thank the popular Governor as also the Board of Indigenous Medicine, Ceylon, for this noble act which goes a long way in ameliorating the sufferings of diseased humanity.

We possess very good reports about the progress of studies in many Ayurvedic Colleges and Schools including Dayanand Ayurvedic College, Lahore ; Rishikul Ayurvedic College, Unani and Tibbi College, Delhi

It lies on Siwarinarayan Road at a short distance from Akaltara Railway Station. The Dispensary building is a pucca one, well built and well equipped with required furniture. The different departments are well nigh separate.

Here both the surgical and medical cases are treated, but for the former cases allopathic medical aid is taken. There is no arrangement for indoor patients.

It creates a very peculiar position for the medical officer as patients requiring regular and serious attention cannot be admitted. A heart finds itself pinched and squeezed among narrow circumstance.

Here is a small garden in the compound where medicinal herbs necessary for *Anupans* are planted. Its extention is possible, but the hard soil and scarcity of water are difficult problems to tackle with.

There is a pucca well in the compound. A sum of Rs. 200 vested in the well would surely be able to meet the scarcity of water, a necessity felt very acutely in summer.

The Medical Officer's quarter is a contrast to the main building which requires urgent extension.

The other building serves as a Pharmacy. Most of the medicines distributed to patients are the preparations of this pharmacy.

The medical officer and the compounder cannot get spare time for pharmaceutical works due to the rush of patients. So some of the medicines which require long time for preparation are called from other pharmacy.

The Dispensary is maintained by the District Board. The sum allotted for 1928—29 for medicine is Rs 700.

This sum as compared to the number of patients and the nature of cases treated is inadequate. The public of Akaltara subscribes but nominal sum which even they fail to pay regularly.

Raja-Sahib of Chandrapur had donated a sum of Rs. 500, for an operation table.

The Board is requested to supply Ayurvedic paper and some authoritative books on Ayurveda for reference to Dispensary Library.

As the compounder has to do both the surgical and medical duties including medicine preparation, office works, he has to devote his whole time in the Hospital work, so the Board is requested for the increment of his pay.

Total number of patients treated from February 1928 to March 1929 is 22028.

Old patients.	New patients	Daily average.
11494	8334	52·4

Expenditure per head 6 pies.

Government for permission to grant registration to practitioners of Indigenous medicine. We heartily appreciate their work and our sincerest thanks go to them and their Chairman, Hon'ble Justice Gokaran Nath Misra.

Now to ourselves. The question of Government recognition of Ayurvedic system of Medicine in Bengal is still where it was last year. The great proverb "first deserve, then desire" applies very exactly to this province of ours The Vaids of Bengal do not deserve Government recognition for reasons already stated and the fortunate few who should be their leaders are mostly qualified in the western system of medicine and thus do not care much for others of the profession, so that Government does not want to stir of its own accord.

One of our correspondents, whose appeal appears elsewhere urges us to make the journal more practical—the same old complaint—and we on our part appeal to our readers to comply with our request by sending us practical case notes and other allied articles. We propose to set apart a page or two for such contributions and we trust we will not be disappointed by our readers and contributors, who have been helping us throughout these long five years. We might inform our readers in this connection that we are approaching every Hospital, Dispensary and Institutions for such contributions but we regret to say that we are not receiving sufficient response from their side. However, we are trying our best in this direction and, God willing, with the co-operation of our well wishers we may improve upon the present standard of the Journal. Our task is all the more onerus as Journal of Ayurveda is the only one of its kind in India, so that no help can be expected from any other quarter. In this connection, we would like to impress upon the minds of our readers that they should consider the Journal of Ayurveda as their own journal and the duty of shaping it to their liking depends entirely

With a view to provide facilities for post-graduate training and research, this Conference urges upon the Government and the local bodies the immediate necessity of allowing private medical practitioners opportunities and facilities for working in all the hospitals, and that the staff of these hospitals should no longer be kept reserved for the Medical services.

RESOLUTION No. 28.

This Confrence is of opinion that steps be taken for proper representation of independent medical practitioners on the Senate of the Univirsities.

RESOLUTION No. 29.

This Conference resolves that the Bill proposed to be introduced by the Honble Dr. Rama Rao in the Council of State be referred to the Central Executive Committee of the Indian Medical Association for disposal and requests Dr. Rama Rao to withdraw the introduction till the said Central Executive Committee has deliberated on the different clauses of the Bill.

RESOLUTION No. 30.

This Conference places on record its protest against the preferential treatment accorded to the European I. M. S. officers by the Indian Government, as against Indian temporary I. M. S. officers in matters relating to pay and gratuity.

RESOLUTION No. 31.

That the rules and regulations of the All India Medical Association drafted by the Central Executive Committee be adopted with the

Original Articles

PULSE

In Theory, Sphigmography and Conditions in Health and Disease, Etc.

BY

ASHUTOSH ROY, L.M.S., (Hazaribagh)

(Continued from our last issue)

In gouty persons (Vayu disease of a particular variety) intermission is associated with high tension. It is due to result of high tension due to toxic effect of the poison on the artery or due to toxic effect on the myocardium of the attendant dyspepsia.

But high tension is not always associated with intermission, *e.g.* Bright's disease. Intermission is probably caused by joint toxic effect on the heart as well as the arteries.

Bodily or mental shock may cause intermission of the pulse in persons of Vayu diathesis (hypochondria and Nervousness).

It may be noted that when the heart is habitually intermittent, acute diseases are not well-borne.

Pathologically intermission may occur in several cardio-vascular conditions—when the heart muscle is not damaged it is restored to normal by exercise or by administration of chloroform.

The newer physiology of the heart has described and explained many cases of missed beat in the radial artery at the wrist. There may be toxic irritation of the heart by various infections and intoxications giving rise to irregular and intermittent pulse, *e g.*—

Extra systole of the heart, heart block, etc.

In extra systole the radial pulse misses the beat; in heart block the missed beat cannot be heard at the apex.

All these are diffierent forms or manifestations of "Kundalini". Thus Kundalini in the lower Chakras represent gross or physical force or Vayu in the Agna-chakra mental or Psychic force fire and in the Sahasrar spiritul force.

We can now understand that "Kundalini force" is the cosmic force modified by passing through the Earth (against our surroundings, for Earth in the Hindu sense means "Kshiti, Ap, Tej, Maruta and Byoma"). Hence Leadbeater says that the dynamic form of "Kundalini" acting in our body, preserves it from adverse forces coming from our environments, through the cerebro-spinal system.

According to the ancient Hindus, cosmic force acting on our body may be resolved into 3 kinds of forces :—

(*a*) from the sun acting through Pingala (Sympathetic).
(*b*) from the moon „ „ Ida (Para-sympathetic)
(*c*) from the earth „ „ Sushamna (Sp. cord).

Creative (anabolism) function of Kapha (Para-sympathetic).
Dissolutive (katabolism) of Pitta (Sympathetic).
Preservative of Vayu (Sp. cord).

Except Vyan Vayu which exists throughout the body acting and re-actiang against our surroundings, all other Vayus are associated with organic action and are thus the force of the sympathetic system. Vyan Vayu is the force of the cerebro-spinal system.

"Kundalini shakti" or the force of reflex centres in the Sushamna are ordinarily latent, but is roused to activity ordinarily, when there is any necessity for spinal reflex action, to preserve the body and keep it healthy.

Particular forms of "Kundalini shakti" are said to reside in particular Chakras (subtle centres in the spine as Vayu ; all such existing in magnified form in the "Sahasrar" as Fire).

When a Yogi can 'fix his sun and moon" (Pingala and Ida) so that they are confined or cease to act, being neutralized (organic action stops and the state of "Samadhi" is attained), Kundalini wakes up. That is, when both branches of the involuntary autonymic system of Nerves are voluntarily controlled, the latent or static Kundalini is aroused and the Yogi passes into the state of "Samadhi".

Sushamna head-end latent Kundalini roused by Yoga-force called fire (higher and more powerful).

(*a*) When heart is acting forcibly, the pulse is large, sudden and vehement and the wave short (Pitta hyper exaggerated).

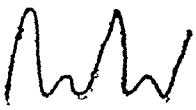
Low tension with forcible heart's action.

(*b*) When heart is acting feebly or sends out less quantity of blood, the pulse is small and easily compressed (pitta depressed).

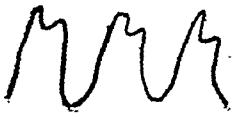
Low tension with feeble heart's action.

The dicrotic notch in the tracing is due to dicrotic wave caused by elastic rebound in the artery.

Dicrotic notch.



Hyper-dicrotic notch.



Anacrotic notch.

When the dicrotic notch in the tracing descends at or below the base line, it is called hyper-dicrotic notch. When it comes in the upstroke of the next wave it is called anacrotic notch.

Anacrotic notch is a question of frequency. Ordinarily a dicrotic wave comes after a distinct interval from the primary wave.

Causes of Low tension

It may be congenital, often hereditary and may come after a meal or warm bath (heat with moisture).

Relaxation of peripheral arterioles may take place after taking warm food, warm bath, by sustained bodily exercise, fatigue, bodily and mental exhaustion, tropical heat associated with much perspiration.

Thus when food is taken, the greater quantity of blood goes to abdominal organs reducing the tension.

Obesity is associated with a low tension.
Depressing influences lower the tension.
Low proteid diet lowers the tension.
Alcoholism lowers the tension.

Sushamna-proper dynamic Kundalini easily roused for reflex action—Vyan Vayu (lower and mild).

(*b*) *The Chakras in the brain.*

These may be divided into 3 groups according to their position in the cranium as follows :—

(*i*) *Lower Brain or Head End of the Sushamna*

Here we find the following structures from below up.

(*a*) Twelve-petalled lobe—medula and pons (floor of the 4th ventricle) from which arise the 12 cranial Nerves.

(*b*) A-ka tha triangle in the 4th ventricle.

(*c*) Hangsa—the Pineal gland.

(*d*) Manipitha—The velum interpositum.

(*e*) The Guru or Fornix, resting his two legs on the basal ganglia, forming

(*f*) The Kama-kala triangle—3rd ventricle.

(*ii*) *Mid-brain*—There are two Chakras.

(*a*) Surjya mandal—corpus striatum } Basal Ganglia.
(*b*) Chandra Mandal—optic thalamus }

Inside Chandra Mandal are found the following structures :—

(1) Chandra-kala or Am-kala, choroid plexus, secreting Nectar (cerebro-spinal fluid).

(2) Within is Nirban-kala, the seat of Nirvan shakti (force of salvation).

(3) Within is Para-Bindu, the place of union or Shiva-Shakti or Prakriti-purusha.

(4) Within is the void-O-Shivasthan or Kailash—the seat of Devata (cosmic soul).

(5) Below Nirban-kala is "Nibodhika"—the region of fire which induces Laya or dissolution.

(*iii*) *Upper Brain*—Chakras from below up and above Chandra Mandal.

(*a*) Maha-Nada—Internal capsule, the place of dissolution of Vayu.

(*b*) Brahma-randhra—Foramen of Monroe.

(*c*) Maha-Shankhini—Auditary area in the posterior part of the upper temporal convolution.

(*d*) Manas chakra—sensorium.

(*e*) Sahasrar—motor area.

High tension pulse.

The pulse beat or wave of high tension appears small because when the atery is constantly and fully dilated (distended) it cannot be much more distended by the pulse wave. This is revealed by the sphygmographic tracing given above.

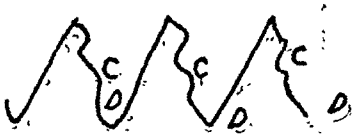
The pulse beat or wave of high tension appears small *i.e.*, the upstroke is short and sloping (depressed Pitta) and the percussion wave tends to be flat-topped. The rate is not generally increased.

A high tension pulse can only be fully appreciated by examining it by means of three fingers placed over it (as is advised generally in pulse examination in Ayurveda).

The tension is evidenced the more the pressure is applied by means of three fingers to arrest the pulse-wave. The pulse may appear weak, but on pressure it appears extremely powerful (the Pitta in the heart is more powerfully excited to overcome the Kapha in the arteries).

Virtual tension—It is an important deviation of high tension pulse, when due to continued tension the arteries are dilated and worn out, while the heart has yielded to the resistance by which it has been opposed and dilatation of the left ventricle has taken place.

The artery is large and full between the beats but when moderate pressure is applied, it allows itself to be flattened and the pulse is sudden both in onset and in ending, the pressure in the artery is abruptly raised, remains high for a short period and then falls abruptly. This is the pulse of virtual, as apposed to actual, tension. The peripheral resistance is there, but the sustained central force required for actual tension is wanting.



Virtual tension.

Virtual tension is characteristic of senile pulse. It is due to rigidity of the aorta simulating high tension.

The percussion wave is flat or square topped, the first half or third of the descent being high tensioned and the remainder C D low tensioned.

It is situated in the womb (inside) and inseparable from the lotus (medulla oblongata and pons varolli, in which is situated the "Brahma-randhra" (lit. the canal of Brahma) or the upward prolongation of the central canal of the spinal cord.

It is adorned by the channel of Kundalini or the canal through which "Kundalini" passes in its upward course, when excited or aroused.

Thus the 12-petalled lotus corresponds to the medulla oblongata and the pons, which together form the head-end of the Sushamna.

(*b*) *The a-ka-tha triangle and the lower Hangsha.*

In the 12 petalled lobe is the "Yoni mondal" or the triangular area, the abode of "shakti" where the two pericarps meet. It is formed by the three lines, which give it the character of a mondal. Its apices are formed by three "vindus", the sun, moon and the fire.

Yamala has confused the "a-ka-tha" triangle with the "kama kala" triangle, which is situated above it. The Hangsha is situated in this triangle.

The a-ka-tha triangle corresponds to the lower triangular area of the 4th ventricle, situated in the 12 petalled lobe. It is the abode of "shakti" (force) *i.e* force centres are located here.

It is situated where the two pericarps (the two halves of the Sushamna) meet. It is formed by the three lines or three groups of fibres, Ida (moon), Pingala (sun) and Sushamna (fire), which give it the character of a mondal (enclosed area).

The apices of the triangle are formed by the three "vindus" (lit. dots) corresponding to sun, moon and fire. That is, the fibres from Ida, Pingala and Sushamna are located here.

Fire represents the regulating force at the head-end of the Sushamna, the sun and moon representing Ida and Pingala.

In the spinal cord (Sushamna proper), the regulating force is known as "Vayu" or "Vyan Vayu". In the head-end of the Sushamna inside the cranium, the force is more subtle and called "fire."

It is called the abode of "shakti" (force). The centres for Ida and Pingala (Sajous's sympathetic centre in the medulla oblongata) are located here.

The (lower) "Hangsha" is located here. It corresponds to the respiratory centre (situated at the tip of the calamus scrip-

In the early stage of *meningitis* there is arterial tension from contraction of the arterial wall.

In severe *neuralgia of the sciatic nerve* there is sometimes severe arterial spasm, unilateral, giving rise to perceptible difference in pulse between the two sides.

(4) *Capillary resistance* :

This is the most frequent and important of the causes of arterial tension. This is due to some toxin present in the blood which acts directly on the capillary wall either provoking contraction or affecting the cohesion of blood and the capillary membrane (*e.g.* inflammation).

High arterial tension in capillaries occurs under the following conditions :

(*a*) *Age*—increases with advance of age (Vayu).

(*b*) *Heredity*—Inherited tendency (transmitted sympathetic endocrines).

(*c*) *Renal disease*—Several renal diseases induce "Renal" or high tension pulse—when in renal disease the tension is wanting, the prognosis is grave.

(*d*) *Gout*—"Gouty" pulse is one of high tension.

(*e*) *Diabetes*—Sometimes associated with high tension pulse specially those due to Kapha or Vayu-Kapha derangement. Diabets of old persons generally, but rarely in young.

(*f*) *Pregnancy*.

(*g*) *Anæmia*—With increased tension there is often associated dilatation of the left ventricle and mitral regurgitation. This is due to mal-nutrition of the heart walls as well as to increased capillary resistance. This is common in those taking excess of proteid food. In Lacto-vegeterians the pressure is low in anæmia.

(*h*) *Emphysema, chiefly Bronchitis and Phthisis*—occasionally the pressure is high, most marked in Emphysema due to fibrosis and imperfect aeration of blood. There may be Mitral stenosis with it.

Etiology of high tension

(*a*) *Food*—A high proportion of proteid food stands first in the list—meat extractions, *e.g.* meat soup, meat

cardiac centre in the brain controls heart's action and keeps the organism living.

The "Pineal sands", found in the gland are believed to be united by the process of yoga, forming the "Shiva Lingam" of yogis, who are successful in making the mind one-pointed towards the Almighty, so that the individual soul is in holy communion with the cosmic soul (God). This is "Yoga" (lit. union) of the man and the divine.

Indirect proof of the function of the Pineal (where prakriti and purush unite) from a metaphysical point of view we find in Endocrinology as follows :—

Frankl Hachwart (quoted in Barker's system of Endocrinology and Metabolism) reports a case of pineal tumour in a boy, aged 5 years, who "spent much time in discussing the immortality of the soul and the life after death," adding that these ideas, and subjects were not suggested to him by any one.

Of course this is pathological, but a physiological enlargement may be conceived as the result of successful "yoga" practice, in which the brain sands accumulate and form a large concretion (as believed by yogis) helping the yogi in clarifying his highly metaphysical speculation.

The "Hangsha" (Pineal gland) is described as seated in the triangle over "manipitha" which is between "Nada and Bindu".

The "Nada and Bindu" are the nates and testes between which is spread the "Manipitha" which is a re-duplication of piameter from the under surface of the velum interpositum, which keeps the pineal in position between the Nates and the Testes.

(*a*) *The kama-kala triangle with manipitha and Guru seated on it.*

This "kama-kala" triangle is the higher triangle in the brain and corresponds to the 3rd ventricle. It is therefore not the "kama-kala triangle" of Yamala.

It is formed by the three lines (bundles of fibres) : the Rudra line from the Rudrâ Vindu, the Brahma line from the Brahma Vindu and Vishnu line from the Vishnu Bindu. These lines therefore emanate from the Pineal, the Nates and the Testes.

(*To be continued*).

GERMS IN AYURVEDA

BY

KAVIRAJ MALIK RAM BHASIN,

BHERA—SHAHPUR.

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1. Introduction.
2. The Germs in Ayurvedic books and their relations to diseases.
   (*a*) The Causes of Germs.
   (*b*) Their relation to disease and to Tridosha Theory.
3. Comparison and contrast between the Ancient view point and the Modren science.
4. Conclusion : which theory is holding ground, whether Allopathic or Ayurvedic ?

Introduction :—

There has grown up a general belief, among laymen in general and allopathic doctors in particular, that Germs are unknown in Ayurveda. The Germ theory, which plays a very important part in the causation of diseases in allopathy, is not given the same place in Ayurveda. Ayurveda has given to germs a secondary place in the causation of diseases and in the following few lines I will endeavour to acquaint the so-called non-believers with the place which the bacterias or germs command in Ayurveda. I will also show how the modren scientists are slowly coming to the Ayurvedic view point.

If we search the vast literature of Ayurveda, we see that the authors (medical) of different times and ages dwelt on Germs in their books. Even the holy scriptures, *i.e* Vedas, give some inklings of germs. Krimi is the Sanskrit word which bespeaks of germs. "The word krimi includes therefore any small living being which lives temporarily or permanently as parasites on man either internally or externally" so says Bloomfield in his translation of Atharvaveda. There are various synonymns of Krimis such as Nilanga नीलङ्ग, पुण्डु वर्वणा नीला etc., which are extensively dealt in Atharvaveda and which, in my opinion, denote the various germs of different diseases. The later medical writers and sages such as

debate. I have been in charge of the Cholera Wards at the Chittaranjan Hospital and also connected with research work in the line for some years past. I venture to give below the following lines only to help in understanding the problem :—

WATER SUPPLY AND CHOLERA.

Regarding the question of water supply, there are usually two curves of rise in cholera cases in the year—one, the bigger, occurs during the Summer months and another, a smaller one in November. Both of them occur during the dry seasons of the year. The water supply of Calcutta is much the same in Summer as in Winter. Why is it then that a more severe epidemic occurs during the Summer months ? The question of leakage into the filtered water pipes must be taken as a rare event when actually some pipes burst. The leakage into the filtered water pipes occurs more frequently during the rains and is responsible for an increased incidence of dysentery and diarrhoea during the rainy season but not of cholera.

INSANITARY CONDITION.

There remain two other sources of water supply in Calcutta viz. the unfiltered water taps and the 10,000 tanks within the Municipal limits of Calcutta. As Secretary of a Health Association in South Calcutta, I carried out certain investigations regarding the incidence of Cholera. The filtered water supply is absolutely inadequate in the Summer when people need more water. This induces them to use unfiltered water both for washing and for drinking purposes. The increased incidence of Typhoid fever during the hot months in Calcutta is due to this cause. It has been found that people who live in or near Bustees suffer more from Cholera. It is also known that there are very few filtered water taps and no unfilered water taps in the bustees, often accommodating thousands of people. In their attempt to get filtered water, the residents have beeu found often to assault each other. The inevitable result is that they use the so-called tanks for bathing and washing (clothes, kitchen utensils) etc.) purposes. The water of the tanks is liable to be thus polluted for two reasons—(1) owing to evaporation the water contains a higher proportion of organic matter and certain salts. This has been found to be very favourable for the growth of the cholera vibrios. (2) There is a fair percentage of "carriers" among the population and it has been found that the pollution of a tank occurs in direct proportion to the number of people getting into it. Besides, latrines are situated near the banks of a large number of tanks and I have a number of photographs in my possession showing the pollution of tank water from these latrines. Thus both "carriers" and an insanitary condition are responsible for the spread of cholera.

in the invisible parasites may be held by *anuman* (अनुमान or logical inference). He still goes further and boldly says, "I suppose, our Western scientists believe in the germs of small pox and measles, although the most powerful microscope and the most finished laboratory technique have so far failed to relieve them to our eyes" "There are lots of things in Western Medicines," he proceeds, "which are only matters of such logical inference." The lastest researches on advance psychology which deals with telepathy and clairvoyance accomplishes such wonderful feats of communication without the help of wires and poles.

Now what are the causes of the birth of these bacterias which are playing such a havock in the universe. Allopathy is endeavouring to find every germ for every human ailment such as Malformation, Tumours, Rickets, etc. From the standpoint of Ayurveda we see that animals are classified into four classes, *e.g.* :—

भूतानां चतुर्व्विधा योनिर्भवति जरायुअण्डस्वेदोद्भिद:

1. *Jarayuja*—placentalia, as man, beasts, deer.
2. *Andaja* or egg-born, such as tortoise, fishes, birds, reptiles.
3. *Svedaja* or born from moisture and heat, moist-heat born, as worms, mosquitos, bacterias.
4. *Udvijja*—Born of Vegetable organism such as plants, grasses, trees.

Leaving the others aside, we see that the external bacteria are of the *Svedaja* type. *Yuka*, *Lekha* come under this category and these krimis are nothing more but visible bacteria that infest human beings. Charak, dealing with these krimis, alludes to the causes and kinds of these germs. He says in Uttarasthana, chapter 4, "By indigestion, by over-eating, by eating unaccustomed food, by incompatible food and by putrefied food the principle of *Shleshma* and *Pitta* get deranged and produce germs of various denominations."

He goes on further and divides these germs into four classes :— *Purishaja* पुरीषज (fæcal), *Shleshmaja*, (phelgmatic), *Raktaja* (blood born) and *Malaja* मलज (filth born). Now we see that microbes which produce disease have their origin in or traceable to the derangement of *Shleshma* and *Pitta*. The Tridosha theory is the tripod upon which rests the whole of our science and it is beyond the compass of this essay to deal exhaustively with this theory, but we have to see its relation to germ theory. The Tridosha theory, in the words of Dr. Gana Nath Sen, "contains

VEHICLES OF INFECTIOUS DISEASES

Iced drinks and Kulpi-Baraf

(Ashesh Chandra Basu, B. A.)

I wrote about the useful properties of ice in my previous article and now I like to point out that ice is also a suitable medium for the transferance of various disease germs. People generally think that bacteria cannot live in ice owing to extreme coldness. But that is erroneous, for bacteria are not generally killed in the freezing of water but they survive and are preserved in ice like living mummies for long periods. This has been proved by scientists like Schmelk, Bujwid, Heyrothin and others.

Schmelk closely observed bacterial life in the glaciers and ice streams of Norway and found them all alive in their icy abodes. Bujwid found in a cubic centimeter of melted hailstone as many as twenty-one thousand bacteria. Heyrothin experimented on the ice consumed in the city of Berlin and found in every cubic centimeter from 2 to 133,000 bacteria. Thus it has been conclusively proved that ice may contain many micro-organisms and living pathogenic germs which are beyond the knowledge of general public and often escape our notice. Bacteria may perish in freezing if they are continuously exposed from 2 to 3 weeks in a very high degree of refrigeration.

UNCLEAN METHOD OF STORING

Now is the question how artificial ice which is made from pure and portable water becomes infected with bacteria. In answer I would only draw the attention of our readers to the slovenly manner in which ice is handled by ordinary dealers and to the dirty place where it is stored covered with unclean rags or spoilt gunny bags. Often in the streets of Calcutta big blocks of ice may be seen lying on or being dragged along the foot-paths into the shops. It is moreover covered with saw-dust which is largely mixed with dust and dirts of the street. This saw-dust is often spread out in the sun on the footpaths and during this time they gather all the germs of infection. I have observed all these uncolean methods and have been induced to draw the attention of the public to it.

A WARNING

Thus, ice gathers all the germs of tuberculosis, dysentery, typhoid, diphtheria, influenza, cholera, small-pox, malarial remittent fever and various other disease germs from the dust and dirt in which it is often allowed to be kept by ignorant dealers. So I would request our readers not to drop ice into glasses or water jars as is generally done. Water should always be cooled indirectly in jars or other drinking vessels placed in ice box. It will of course entail some expense and a little trouble but

Allopathy is so far groping in the dark about the birth of these germs and is still unaware how the first germ was born. Ayurveda has beautifully demonstrated how these obnoxious germs take their birth. Still more they (Allopaths) are quite uncertain whether this germ theory is capable of explaining all the phenomena which lead to the causation of diseases. Captain Srinavasa Murti has said on one occassion, "All is not well with this germ theory, it is not capable of explaining all that needs to be explained. Strictly speaking it is not a theory at all but only a hypothesis, one among many, that are advanced to explain the causation of diseases." Like Allopathy Ayurveda does not give a primary place to germ theory in the causation of diseases. Ayurvedic sages looked upon the germs as one among many causative factors capable of producing disease if the soil or field is suitable for the growth of the germ seed. Allopathy has given all-important role to germs in causation of diseases but now Western scientists are slowly recognising the fact that germs alone are not essential for the production of disease but they are capable of producing a disease only when they get a suitable soil or field to thrive upon." Dr. C. Muthu, M.D., M.R.C.S. has only recently given a crushing answer to the believers of the germ theory in the following words :—

"I agree with the late Sir James Goodheart that bacteria are probably result and not causes of deseases in the same way that vulture that comes from miles to prey upon dead carcase are not the cause but the result of the presence of the dead body." Ayurveda prefers to have only one theory, namely the Tridosha theory, as instrumental in the causation of diseases and under sub-heads it has not only germ theory but also every other theory which may lead to disease. Considerable arguments are forthcoming from the modern endocrinologists to show that this germ theory which was once held as prime factor for the causation of diseases is slowly drifting away before the stronger modern theories of endocrinology, malnutrition, etc. and these modren theories are verging nearer to the theory of Tridosha. Lancet, the great medical journal, says in one of its issues, "The bacterial theory of infectious diseases has been unchallenged for many years and now it must be acknowledged that there are certain facts which this theory does not account for fully." Captain Murti says, "If we realize the imperfections and weaknesses of this germ theory, does it not behove us to examine any other theory which holds good ? Indeed, when one goes through vast literature that is gathering round endocrinology,

TREATMENT OF TUBERCULOSIS

Influence of Climatic Change

(By K. N. Mukherjee, Ronaldshay Medical School, Burdwan)

1. The regime of regulated rest and exercise, proper food and open-air life, is the fundamental essential in the treatment of tuberculosis, Suitable climatic environment makes this open air life more easy and enjoyable.

2. When these essentials are assured, a change of climate is of definite value in a considerable number, probably the majority, of cases, but with the proper regime many cases will do well in any climate.

3. Any change of climate involving the fatigue of travel is contraindicated in acute cases with fever or haemorrhage, or in very far advanced and markedly debilitated cases. Absolute bed-rest is the one essential here.

4. No patient should be sent away in search of climate who cannot afford to stay the reasonably expected time and to have the necessary food, lodging and care.

5. Competent medical advice and supervision are essential.

6. One of the most valuable asset of change is the education of the patient. This may of course, be obtained in a suitable environment without reference to climate, as in a sanatorium near home.

7. Selection of a suitable locality is an individual problem for every patient, depending upon his temperament, tastes and individual reaction to environment, as well as the character of his disease. The advising physician should have an appreciation of these as well as knowledge of the particular environment to which the patient is being sent Contentment and reasonable comfort are essential.

8. There is no universally ideal climate. For each patinet there may well be a most favourable environment if we are wise enough to find it.

9. There is a reasonable amount of evidence that certain medical types of cases are more favourably influenced by certain conditions of climate, everything else being equal. For example, reasonably cold, dry, variable climate, such as is found in the mountains for young or vigorous constitution which will re-act well. Dry sunny climate for laryngeal cases and those with marked catarrhal secretions. Equable, mild climates at low altitudes for the elderly and those of nervous temperaments, as well as for those with arteriosclerosis, weak hearts or marked tendency to dyspnoea.

TODDY AND ITS USE

BY

VAIDHIAPATHI T. G. RAMAMURTHI AYYAR,

Physician, "Municipal Sidha Dispensary"

Erode, (Madras).

—:o:—

This is the fermented juice drawn from Palmyrah or cocoanut tree. As this is a common intoxicant sold under license in every town or village in India, I need not dwell upon the various details connected with its manufacture. The labouring class of people drink this every day to calm their aching frame after the day's work. Sometimes they drink in excess and cause nuisance. This valuable drink gives fresh energy to the body that is exhausted after the toil and turmoil of the day. Hand-carts loaded with heavy bags of grains are seen in the streets drawn by these coolies. They do not mind the hot sun. Sunstroke is rare among them. Heavy rice bags are seen carried on their backs. Can any other person, who live in a gentlemanly manner eating dishes of valuable mutton, cheese, ghee, dall, milk and so on, do such a work or one quarter of the work that is turned out by a labourer ? I can bet that such a highly nutritious nourishment taken by these gentlemen will in no way produce a beastly energy possessed by a labourer who is eating only 'kambu' (bajra) or 'cholam' (javari) and drink toddy. The labourers are very healthy and strong. Most of their time is spent in open air and sun. Curtons of liver is seen in men drinking strong alcohol but it is rare amongst toddy drinkers. The labourers' food—5 a.m. cooked kambu—cold water preserved—onions—chillies ; go to work—12 noon—newly boiled cholam or rice—dall and tamarind puddings or sauce—again work—6-30 p.m. go to toddy shop—drink belly-full, go home—sleep off the whole night in pleasant dreams—rise at 5 a.m. much refreshed and with sharp appetite. In the southern parts of this presidency, we can see such men live to an advanced age of not less than 65, hale and healthy. So we cannot say that toddy will in any way deteriorate the health of an individual. On the other hand the labourers are in need of this panacea for preserving their health and to be active in life.

(a) The washing-out of the tissues
(b) An accelerated resorption
(c) A more thorough cell nutrition
(d) Reduction of the infiltration.

Fresh blood contains nutritive elements, vitamins, oxygen, leucocytes, immunizing bodies and enzymes. Moreover, such induced hyperemia permits a tissue drainage which removes accumulations of altered cell metabolism and functional products. A normal supply of blood carries away organic debris, exudates and extravasations.

For daily emergency practice, considering the advantages and disadvantages of all other therapeutic procedures, investigators and clinicians of international reputation have found that in order to prevent or to treat local inflammatory processes and to avoid the formation of pus as early as possible, Antiphlogistine, covered with an impermeable membrane, will yield the best results, because it retain moist heat and need not be changed for a long time.

Reports of Societies, etc.

DAYANAND AYURVEDIC COLLEGE, LAHORE.

Copy of remarks by Mr. Asghar Ali, Asstt. Inspector General of Civil Hospitals, Punjab, who visited Dayanand Ayurvedic College on the 23rd January 1929 :—

I inspected the Dayanand Ayurvedic College Lahore today (23-1-29) and was shown round by the Principal and the two senior professors.

Buildings :—The building consists of four self-contained blocks, three for the College and one for the Hospital. The Block No. 1 is made up of 4 lecture rooms, a Science Laboratory and a Materia Medica Museum. The Block No. 2 is the Pharmacy department, where indigenous drugs, brought from all over India, are turned into powders, Tablets, Extracts, Essences and Tinctures, by means of machinery. The Block No. 3 is the Anatomical block, made up of a dissection hall accommodating 12 tables, a Lecture Theatre, a Museum, an Embalming room and a cold storage room. The Block No. 4 is the Hospital attached to the College and consists of an outpatient room, four indoor wards, each for 12 beds and an Operation room. Two of these wards are being used as hostels for students. There are Flush System Latrines and a Shower bath attached to the Indoor wards. The construction of these blocks cost the College authorities above a Lac of rupees besides the cost of land Rs. 77000. There is a small Library consisting of 377 books on the

If we glance over the causes of the spread of allopathy in India, we see that amongst many other causes which ushered the advance of the western science and brought about the decline of the Indigenous system, was the adventurous spirit coupled with free give and take policy of our western scientists. Their spirit of research requires to be followed.

Ayurveda has only earned its recognition by the hard labours of its luminaries like Gana Nath Sen, A. C. Bisharad and Kaviraj Jamini Bhushan Roy, but the actual struggle of the survival of the fittest still awaits It requires a lot of research work in its various branches and actual test of various Ayurvedic medicines in the treatment of most prevalent and stubborn diseases such as typhoid, malaria, kalazar, etc. by the bedside of the patient in the indoor hospital. The orthodox physicians may be satisfied with the idea that everything is enclosed in the ringfold of modern mutilated Ayurveda and let they enjoy their opinion, but to those who wish Ayurveda to reach the summit of glory as it was in those hoary days, must know that the keen struggle is absolutely essential to fight to the end. Ayurveda is surrounded by many fat enemies who are always ready to defeat it, if occassions arise. Let us fortify ourselves against them. United we stand and divided we fall.

No doubt the Journal of Ayurveda has done a yeomans' service in bringing Ayurveda to the light of the modern scientists and its conductors are to be congratulated and encouraged for their meritorious services not only to the suffering humanity but to the profession in particular. It is the only journal of its kind in India and is the mirror of our science. I request the organisers of the journal to make it practical by illustrating it, giving clinical case reports and also by giving up-to-date subjects on more complicated diseases and their treatment. Is it not advisable to issue its special numbers as they are issuing the special numbers of the sister Journal *i.e.* the Indian Medical Record ? No doubt the English knowing Ayurvedists are not so numerous and the Editors do rightly complain about the dearth of conbributed articles, but shall we be satisfied with this only and do not think of tiding over these difficulties ?

Secondly I request the organisers of the Journal of Ayurveda to open such a column in its pages in which the Ayurvedic practitioners may give clinical history of those difficult cases and may get advise from its such numerous readers and brother practitioners. Every practitioner has cases which he himself cannot cure and in which he would like to invite the opinions of other brother practitioners. Such a column should be reserved for such purpose only and this mutual consultations will not only benefit the suffering humanity but enhance the experience and various applications of our medicine in difficult and chronic cases and this will lead us to a definite data in the practical field.

In the end I request my brother practitioners to think over all these and bring a pressure on the conductors of the journal to spare its columns to the best advantage of the profession. I hope nobody will fall out in this opinion to enhance its pages and bring the journal to the standard of other like journals on medicine.

[The conductors of Journal Ayurveda welcome the above suggestions and will be glad to spare a few pages for practical case notes and allied questionnaire. Speaking frankly, they always publish such matters whenever these are sent to them. But the defect of the matter is that they do not get these materials very often.

However, we invite the attention of our readers to this important aspect of medical journalism. In the meantime we offer our hearty co-operation to the contributors of such articles. They will always find a ready Hemming and Condell in us. No coersion on their side will be required. We request our worthy correspondent to break the ice—*Managing Editor*]

Health and Hygiene

ANTI-BACILLUS THEORY

—:o:—

Cell Dies To Regenerate

(By Dr. A. C. Mazumdar L. M. S.)

When we dissect and study God's creation which is an emanation from His omnipotent Body, we generally find in it three undercurrent of forces flowing from its beginning to its end. The combined and uniform action of the three forces is, as it were, the pulse and animation of life of the Universe. The animate and the inanimate, the animal and the vegetable kingdom, the fermament, the stars and the planets, each of His creation is enlivened with their soft and uniform rays of life. The smooth, uniform and combined working of the forces is creation and preservation and the opposite is destruction.

Now we see that creation, preservation and destruction lying submerged in the Person of that omnipotent Being for eternity and manifesting their energy as life, growth and death, show and bespeak of the omnipotent power of the Creator. These three conditions *i. e.* creation, preservation and destruction, have been, according to circumstances and throughout all ages, described in various forms, fine and crude. They *i. e.* creation, preservation, and destruction have made themselves

tangible in the moral as "Satwa", "Rajas" and "Tamas" ; in the metaphysical as "Brahma", "Vishnu", "Agni", "Varuna", (air, heat and water) ; and in the animal world as "Bat", "Pitta" "Cough" (Nervous, Hepatic, and Lymphatic system) This "Bat", "Pitta" and "Cough" have manifested themselves as "Ira", "Pingala" and "Susumna" in the human Pulse and have made the animal kingdom animated with the spark of life. These *i. e.* creation, preservation and destruction, have been working in the form of "Bat," "Pitta" and "Cough" or "Nerve", "Liver" and "Lymyh" in the animal world in poportion to its existence, though for a shorter period as compared with that of the universe. The three forces "Bat", "Pitta" and "Cough" germinate in the very moment of impregnation of the ovum in the finest molecular shape and are kept up to the last as a combined flow, the vibration of which is felt in the human pulse.

AIR, HEAT AND WATER

Let us now explain the above-mentioned facts in a crude form. Brahma as a deity of creation, Vishnu as that of preservation and Maheswar as that of destruction are in existence in the person of that omnipotent Being. Vayu as the cause of creation, Agni (heat) as a help to preservation and Varuna (water) as a help to destruction in the physical world are known as Creator, Preserver and Destructor. Now let as try to symplify the above facts. We see in the outside world that air containing in its element oxygen as lifespark is the cause of life and that heat is the cause of growth as eggs put in warmth bring forth the little ones, and that cold is the cause of destruction, as when the same eggs are exposed to cold they are killed. It is then evident from the aforesaid example that air, heat, and water may be called as creator, preserver and destructor in the physical world in a broader sense. The characteristic feature of Vayu is motion. Vayu by the supply of oxygen stimulates life and movement. The region where Vayu works is the nervous system in the animal body Air moves and thereby stimulates the inanimate to life The stimuli are getting continuously reflected from the unseen nervous system of the universe and hence to animal kingdom. So the nerve is the main organ of conduction, locomotion, and perception. Some may say that it is quite an absurd proposition to believe, that this poor universe has got a nerve. To that my reply is that what attracts father to son, wife to husband, brother to brother and what repels ? Is it not the nerve in an electrical condition (mind) ? What repels then *surjamukhi* flower from the moon ? What attracts and repels the masses of water in the ocean to and from the sun and the moon and what are these attractions and repulsions ? Surely it is the nerve, Bile or hepatic system that work in the similar way in the human body as fire in the physical

world. The consuming property of fire consumes the finer portions of the body which is consumed in such a way as to make it capable of getting assimilated or being one with the elements of the universe and the crude or earthly matter is left by as ashes. Just similarly the bile digests the food substance with fire-like affinity and makes it capable of being assimilated or being one with the cellular element and the portion not digested is left by in a crude form as faecal matter. Water is sleshma or lymph of the physical world. As water kills by inundation every spark of life in the physical world, so sleshma by its freezing property extinguishes every bit of fire in human body. *This "Bat", 'Pitta' and 'Sleshma' have got in the person* the same three phases of forces, *i. e.* creation, preservation and destruction, for they themselves can help to create, preserve and destroy in different times. When these three forces work together harmoniously, it is life ; when disorderly, it is disease or death

ETERNAL LAW

Body-cells are the fountain-spring of these three currents of forces. When there is loss of equilibrium in the fountain-spring, it disturbs the waves of forces. The differenciated cells are again the outsprings of the one primary mother-cell originated in the womb by the intercollation of the sperm and ovum. The primary mother-cell inherits from its parents an unsteady eqilibrium which spreads gradually from one differenciated cell to the other. The unsteady equilibrium creates in the cells themselves a cellular and anticellular action, for otherwise we would not find babies born with health or with diseases in a patient or in dormant condition. The steady or unsteady, cellular or anti-cellular action stimulates the cells of the human body to healthy or morbid secretions. This healthy secretion of the cell is health and morbid is disease. This morbid cellular secretion is the poison which torments the human physique The same unsteadiness pervades even the physical world that we ever see that good changes to evil and evil to good, light changes to shade and shade to light and calmness changes to agitation and agitation to calmness and so forth. So we conclude that cells tend from health to disease and disease to health, like the pendulum of a clock. As we see steadiness and unsteadiness in every thing on earth, so the law enunciated holds good with the body-cells. This unsteadiness is the seed that germinates into disease in the human system.

DEFECTS OF OUR DIET

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How To Remydy Them

(By Dr. A. C. Roy Chaudhuri)

(Continued from our last issue)

RICE

Too much is taken in many cases. As much as 12 ch or ¾ sr daily. The proper quantity urged to be 2½ to 3 ch. for one meal. The real psychology behind the act is the consumption of as much of rice as possible, the other articles are only a means to this end and not an end in themselves. Remove this mentality and take other substances in proper quantity when the quantity of rice taken will necessarily decrease.

Atta should replace one meal of rice. For the students and office-goers I would advise "atta" at noon and rice at night. Rice meal is a bulky meal and the stomach does not get necessary rest if taken at noon. The quantity of "Atta" should be 2½ ch "Atta", preferably '*jata* atta,' which contains all the ingredients of the grain.

Our idea of a satisfactory diet is that of distending the stomach to its utmost limit—the sensation of positive discomfort that comes after such a meal is taken to be a *satisfactory* meal. Change this idea. 'No appetite' stage should be the limit of filling up the stomach.

By taking larger and larger quantity—almost all state of fascination and intoxication comes for taking larger and larger quantity. The idea should be to take smaller quantity but better quality. You will grow more active and alert. The mental apathy and physical inactivity amongst us is very greatly due to the unbalanced and excessive quantity of acid food, like rice, taken.

Rice should be "dheki" rice and that too not too much cleaned when it loses its all the red covering and also the germ portion. Milled rice should be avoided almost like poison for most of the nutritious substances are removed in the process of milling. We pay more for de-vitaminised, de-phospated, de-mineralised milled rice than for unmilled "dheki" rice. The difference between the two is of Rs 1-8. to Rs. 2 per maund.

"DHEKI" RICE

So take "dheki" rice and not milled rice.

If you are advised to use Khaddar which will bring food to the poor millions of India, so with the use of "dheki" rice support a large number of poor women of the villages. Here is economy, nourishment and service to the poor, three combined in one.

Bengal should make "atta" its staple food and rice a money crop.

There is an idea that old rice is better than fresh rice. This is wrong. Older the rice the less it contains vitamin. In one year nearly all the vitamins are destroyed. Always use fresh husked rice. Storage of rice in the humid atmosphere of Bengal rapidly devitaminises the rice, the staple food of the country.

Repeated washing of rice should be discouraged. By six washings just ½ the quantity of phosphorus present in the rice is removed. The loss of phosphorus interferes with calcium assimilation—which means, chiefly, bone formation being interfered with.

"ATTA"

'Beri-Beri' is a disease of rice-eaters. "Atta" is a preventive. It contains all the minerals, all the salt (cal. and phos.), all the vitamins of the original grain of wheat. So use this in preference to rice, at least once-a-day. As is the milled rice to "dheki" rice, so is white flour or "maida" to "atta." White flour is devitaminised. So never use "maida," but use "atta" only.

Rice gruel or "marh" should not be thrown away. In fact there should be no "marh." Only such quantity of water should be used as will be absorbed by the time the rice is well-cooked. This is being done in many families without the least inconvenience. This will save you 25 p. c. of rice consumption in the family which means that amount of money saved for buying other necessities. The water soluble vitamin B is lost in the "marh". This saves the vitamin and also the mineral substances. Throwing away of "marh" is a criminal folly.

TO NEGLECT BREAKFAST ENDANGERS HEALTH

Authorities Agree Morning Meal Is the Most Important One of Day

Adults who persist in going without breakfast, or who try to sustain their bodies with a hastily swallowed cup of coffe and a piece of toast in the mornings, authorities agree, are deliberately under-mining their general health.

But when children are sent off to school similarly undernourished, the result are far worse. Ill health often ensues ; their delicate bodies are in no condition to resist infections ; both mental and physical capacity is lowered and the child is likely to develop abnormally.

The importance of breakfast is unfortunately misunderstood. Because there is not the same leisure to eat and enjoy food in the morning, as, for example, in the evening, is perhaps one of the main reasons for the

widespread neglect of this meal. The day's tasks lie ahead, not behind, and it is human nature to wish to get at them, finish them and enjoy the day after the day's work is done.

That is all very human but not very scientific. It has been established beyond contradiction that at least seven-tenths of the day's work is done during four morning hours. This means literally that to be a productive member of society we must accomplish much in the morning, though we do permit ourselves to slacken our energies in the afternoon.

In the performance of its physical or mental tasks the body constantly uses up energy. If the body has little to start with in the morning what result naturally is to be expected ? Listlessness, drowsiness, incapacity, inefficiency, to be sure. When breakfast is neglected, bodily energy is not replenished ; we draw upon the insufficient stores of the energy accumulated during the previous day. And that is almost gone after a night's sleep.

There is only one way to supply the body with energy, namely through food. Certain foods contain energizing and body-building elements in abundance. Such a food, providing it is likewise easily digestible, is an ideal food to eat for breakfast. Consequently dieticians and physicians as well as economists and employers recommend, for example, a cereal such as rolled oats every morning for breakfast.

In oats there are proteins, carbohydrates, minerals and also vitamins in abundance. There is, also, the bulk or roughage, which the system requires for proper intestinal action, and few foods are more easily digestible.

So, this question of what to eat for breakfast becomes very simple after all. A good, well-balanced breakfast can be prepared in twenty minutes easily. The pure, packaged and almost wholly prepared foods of our modern times have taken all the drudgery out of the preparation of brekfast. If such a cereal food is eaten as the basis of breakfast and to this is added a bit of fruit, a cup of hot beverage or milk and a roll, all the requirements of the body until luncheon time are satisfied.

Adults feel better and work better after such a breakfast ; children will quickly manifest improvement not only in the application and greater alertness they show in the studies, but also, in a higher vivacity towards life, which is only another way of expressing better health.

HEARTY BREAKFAST AIDS CHILD'S GROWTH

"How can I get my children eat breakfast ?"

Thousands of mothers, realizing that breakfast is by far the most important meal of the day both for children and adults, ask themselves that question every day ? It is easier to coax a child than to command

and as appetite in the morning is not always vigorous, the question has a basis of sound sense.

Obviously, a heavy breakfast of the old-fashioned kind drives away what little appetite a child may have. But wait! A "light" breakfast if by that is meant merely coffee and a roll, is insufficient to keep the child well nourished. What kind of a breakfast is there, which is both light and nourishing?

Perhaps the answer to that will solve the whole problem. It is a well-established fact that children love hot cereals, such as rolled oats, served with milk or cream. That kind of a breakfast tempts the hunger of the child which lies dormant after a night's sleep, and before the work and play of the day has begun to consume the child's energy.

If the child likes rolled oats, and most children do, the question of coaxing appetite has been solved. Are rolled oats nourishing in a degree sufficient to keep the child healthy and amply supplied with energy until time for luncheon?

Dieticians all over the world agree that few foods are as nourishing and as healthful as this cereal which contains protein, carbohydrates, minerals and vitamins, all essential to life. Protein makes bone and muscle; carbohydrates yield energy; minerals are necessary to the system as are vitamines. Oats served in this form is easily digested and quickly assimilated.

THE DANGERS OF TOBACCO

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Most Seductive Habit

Dr. Gustave Strake writes in the "New York Times" that he himself has been an addict to the practice, he says, and knows its dangers not only from personal experience but from his observation of patients in his medical practice, and from the opportunity afforded him to compare his own feelings with the symptoms complained of by others.

"The question is often asked," he says "which form of tobacco is most harmless. There is no such thing as harmless tobacco. You might as well ask which form of alcohol is most harmless. Tobacco remains tobacco, no matter how used, just the same as alcohol. It makes no difference whether snuffed, chewed, used in a pipe or in a cigarette, the effect are all the same, the only difference being the quantity used. I do hope this will allay, once and for all, the question as to which is the most harmless way of using tobacco, because you cannot use a poison, no matter in what form but you get some of it in your system and suffer from its effects.

"What causes the craving for more tobacco, when one has become an addict to it, many will ask. There are several answers to the question.

The first is that the nervous system will develop very quickly habits that are harder to get rid of than to acquire. The second is that once you have developed a stomach that craves the effects of tobacco, you have the same craving as when you are hungry, and then beg to call for more It is usually a sour stomach, but may not be enough so as to make itself felt, yet the call is there just the same and will not be satisfied until another smoke allays the craving and deadens the call.

The hardened excessive smoker will admit that he wishes he had never taken it up, but as he cannot break himself of it, he continues. Would he advise others to use tobacco? No, he would say it is an expensive, useless habit even though he has derived lots of pleasure from his cigar or pipe. If he had been properly advised in his youth, before becoming addicted to it he probaly would not have gone so deeply into it. It is a habit that grows on one and once established is very hard to break away from. So my advice to all youths and maidens is: If you want to remain in first-class condition all the rest of your life 'abstain.' There are other joys less seductive."

TRANSFUSION OF BLOOD

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Old Method and the New

(By Ahesh Chandra Basu)

Transfusion of blood which was extensively used during the Great European War and which is now in vogue among the surgeons of Europe and America is a very old practice. Reference to it is found in the lines of "Hudibras" where Samuel Butler says :—

Can no tranfusion of the blood
That makes fools cattle, do you good ?

Samuel Pepys in his "Diary" refers to some transfusion which he himself witnessed. Before this we find in the records of an account of Pope Innocent VIII undergoing an operation for transfusion in the year 1492. In these old days transfusion did not take any feasible form and was occasionally practised on animals, rarely on human beings. The blood applied at this time was generally taken from calves or lambs and which being incompatible with the human blood resulted mostly in the death of the receiver.

SCIENTIFIC METHOD

Though scientists tried to revive it in the 17th and 19th centuries, it did not take any scientific form till the year 1907 when the direct method of tranfusion from the artery of the donor into the vein of the receiver was discovered in America. This direct method expounded by circle had

still various disadvantages as it did not enable the transfusionist to know how much blood was introduced. It has other drawbacks. Some of the donors were found incompatible as their blood did not match with that of the receptors' and hence failed to neutralise in the receptor's vein. In other words the bloods were found incompatible. As a result of this incompatibility of the blood the patient immediately suffered from hard and difficult breathing, distress in the precordial region (fore part of the chest), coughing, rapid and small pulsations, nausea, backache, vomiting and other toxic symptoms. There was often partial or complete suppression of urine and the receptor often lost his consciousness and sometimes died during the time of transfusion. And in cases of slight reactions when smaller amounts of blood were given, chill, vomiting and fever were generally experienced. This was a great set back in the way of its final achievement, and led to a new discovery by Jansky, the great Scandinavian scientist. He solved the difficulty and discovered his theory about the grouping of donors. Since then blood is always matched and patients and donors are typed or grouped. Surgeons ceased to transfuse blood indiscriminately and now a child even is not permitted to be transfused from its mother without her blood being previously examined and without finding whether the child and its mother belong to the same grouping.

The object of this blood-test is to find that the corpuscles of the donor or of the receptor are not clotted or agglutinated by each other's serum. In emergent cases, however, if suitable donor is not found the blood is permitted to be tranfused even if it coagulates the corpuscles of the receptor but tranfusion is not allowed if reverse be the case *i.e.* if serum of the receptor coagulates the corpuscles of the donor. To overcome this difficulty blood should be examined by the Wassermann test before transfusion.

HAEMORRHAGE AND PROSTRATION

The chief efficacy of blood-transfusion is found in cases of hæmorrhage and consequent prostration or collapse and in cases of chronic or acute anæmia where a proper amount of compatible blood will surely revive strength and vitality in a marked degree. In hæmophilia which is a peculiar hereditary disease causing a profuse flow of blood, it is a specific therapeutic against and from any part of the body from the slightest hurt, a specific therapeutic agent has been found of excessive value. It helps in arresting bleeding rather promptly. In shock and loss of blood from severe operations transfusion does a lot of good as it supplied normal blood platelets. It betters the general condition of the patient and assists bringing back the normal pressure of blood. In cases of profuse hæmorrhage after child-birth it is the ideal restoration resort. In cases of poisoning when the blood corpuscles are destroyed or rendered

inactive an immediate transfusion has been found to be very effective. In cases of prolonged illness or after long convalescence when the patient's blood loses its power of coagulation, transfusion becomes necessary to remove many other diseased conditions and enhance the restoration of health and vigour. It is also useful in chronic bacterial infection when a supply or fresh serum into the patent's vein increases the power of resistance.

At present surgeons of Europe and America have given preference to transfusion of modified or citrated blood and that by the indirect method. In order to avoid clotting or coagulation during the time of extraction they administer citrate of sodium in a miniute proportion to the blood. This citration of blood does away with the problem of coagualation. This coagulation is due to the presence of calcium in the blood and sodium cirtrate renders the calcium inert. Blood is taken from the radial artery of a healthy young man and after citration can be kept for a long time and conveyed to patients for transfusion.

It has however been found that in most cases transfusion has not been curative especially in anaemic cases and re-actions of various types have been found to occur. In pernicicious anaemia, it has been observed simply to induce remissions and not to cure the conditions. This has of course happened in some of the transfusions done in Calcutta and a temporary relief was simply noticed. This I think is due to the improper knowledge of the art on the part of the operators. I now leave the matter for further discussion and research to my medical friends hoping that transfusion like the "Ringer lokko" injections may some day truly rekindle the dying spark of life which very often, rather than not, ebbs away for lack of this vital fluid.

REGULATION OF DIET

Way To Health and Strength

Like all other machines the human body is in a constant state of wear and repair. By means of the kidneys, lungs, skin, bowels, and other organs, the body throws off waste meterial, and in order that energy may be maintained and these wastes made good of, it must constantly draw upon food for these purposes. There is no subject more important than this : that the supply of food shall be adequate to the needs of the system and be capable of serving the best interest of the body. The health of the individual depends to a large extent on proper nutrition ; and in disease this factor also is often the crucial point upon which the recovery of the patient rests. The basis of bodily health and strength is correct

nutrition. Any method that does not take this fact into consideration must fail, writes Edward Thompson in "Health for All."

FOOD—WHAT IT IS

Food may be said to be any material that can be utilised by the body to build up normal structure, repair wear and produce energy. Food substances are of two forms : organic and inorganic. The organic forms of food are classed, according to their origin, as either animal or vegetable foods, and these are further classified as proteins or carbohydrates. For practical purposes we may say that these classifications are the following : Animal protein foods : Meat, fish, eggs, cheese, and any products of these foods The vegetable proteins are the gluten as found in cereals, such as wheat, rye, oats, etc., and the legumins of peas, beans, lentils, and the like. The carbohydrate portion of foods comes from both vegetable and animal sources. Starch is the chief carbohydrate food. This substance is obtained from various parts of plants. It enters into the diet as bread, potatoes, rice, and many other forms which will come to the reader's mind. Sugar, also a carbohydrate food, comes from both animal and vegetable sources. The main sugars in daily use come from plants and are known as cane sugar and beet sugar, and the sugar which is naturally found in fruit and honey is termed grape-sugar. Sugar derived from animal sources is known as sugar of milk. Fats and oils are also carbohydrates and may also be derived from both the animal and vegetable kingdoms. The various fats of meat and butter are the animal fats, whilst vegetable oils include olive oil, nut oil, and many other forms.

MINERAL ELEMENTS

In addition to proteins and carbohydrates we also need the so-called inorganic or mineral substances. These, such as potassium, sodium, and the phosphates of calcium, and all the rest that are required to build the normal diet are found in the foods we eat always, provided that in their preparation these elements have not been lost. The peeling of potatoes and the making of white flour are good examples of the ways in which essential food values are wasted.

Last, but not least, we come to the vitamin content of the diet. What little is known about these substances is mainly that certain diseases such as rickets, scurvy, etc. are due to lack of specified vitamins and that the patient will promptly recover when given foods that contain a normal amount. In the average diet there is a tendency for foods containing these substances to be neglected, with the result that the average diet is deficient in vitamins. So much publicity has been recently given to the subject of vitamins that many people are of the opinion that they are more important than other elements of food Hence the market is flooded with foods which promise these substances in abundance. This

is likely to lead to many dietetic errors. The vitamin content of food is no more important than any other and equally no less. The whole problem can be solved, not by adding here and there to the diet certain so-called vitamin foods, but by arranging the diet so as to include the natural vitamin-containing food-stuffs in proper proportion.

DIGESTION

All food must pass through the many digestive and absorptive processes before it can be transformed into the living meterial of the body. In the mouth the food is merely mechanically prepared for the stomach except that starchy foods are acted upon by the saliva and partly converted into sugar. But the saliva does not act upon the proteins ; these foods are broken up by the teeth so that the gastric juice may act more readily on them. The stomach secretions act upon the proteins but the digestion of starch is delayed by the acid medium of the stomach secretion.

It may not be superfluous to point out that digestion is not absorption. Until the digested contents of the stomach pass into the small intestine, practically no part of the food has been absorbed. It has been prepared for this purpose. Then, when it passes into the intestine it has to be acted upon by three other secretions, the bile from the liver, the pancreatic juice, and the secretion of the intestine, before it is finally reduced to a condition where absorption by the blood and lymph vessels may take place. The residue of the food has to be excreted from the body to complete the digestive process.

IMPORTANT POINTS

The foregoing outline of the essential constituents of food, and the physiology of digestion serve to show us that when we are arranging the diet to meet all the demands of a healthy and stong body there are several points which we should keep in mind. First, that the system should be capable of carrying out the functions incident to digestion, such as the muscular movements of the walls of the organs, and that there should be adequate supplies of blood and nervous energy in order that the various secretions are sufficient to attend to the task of digestion. Secondly the food materials should be of sufficient quantity and quality, and selected to make the process of digestion as normal as possible. Thirdly, the alimentary tract should be kept active and clean so that pathological processes are not allowed to be insidiously established.

We see, therefore, that the attainment of health and strength is not only a question of diet. It must be obvious that, although a diet may be well selected and contain all the elements of a well-blanced diet, if the organism is impaired and unable to make use of the food, the condition will not be made better, but be aggravated. In such cases

there may be a lack of tone in the muscles and suitable exercise is imperative. Or the whole system may be tired and lack nervous energy, and nothing short of a complete pyysiological rest will restore the power of the system to make use of the food. We see here that our third point becomes first in importance. Before the body can make use of food, the alimentary tract must be active and clean. The most practical way of doing this is to clear the bowels by means of an enema or douche, and fast until there is a return of keen hunger. Then the digestive processes will be able to utilise the food offered to the body.

QUANTITY AND QUALITY OF FOOD

The second point requires the most careful consideration. Provided we start off with a body that is functioning normally, it is safe to say that we owe most of our ailments and weaknesses to mistakes in the quantity and quality of our daily diet. In respect of quantity there are a couple of rules that should make it easy for the ordinary individual to decide this point for himself. The danger of excess in quantity lies in unguarded eating of those foods which are rich in protein and carbohydrates, which we have classified in the earlier part of this article. There is no danger of eating too much of the other foods, the fruits and salads (which might be termed the corrective and bulky foods), if one keeps within reasonable bounds. As a general rule, present day diet runs to excess in the starchy and sugary foods rather than in protein foods.

The quality of food should be judged from the standpoint of health and nutrition, and not from its apparent attractiveness. As an example, white bread presents a very fine quality of starchy food, but it is quite deficient as a food. Quality in food is largely a matter of naturalness. Of course, some foods, such as the potato, may be cooked and still be a valuable foodstuff, but where there is elaborate cooking and mixing of foods, it is safe to assume that the quality of the food suffers, judged from the standpoint of health culture.

A HEALTH-BUILDING DIET

A practical health-building diet should be arranged as follows. There should be three meals in the course of the twenty-four hours. These should be evenly spaced so as to allow sufficient time for digestion. Five hours between meals would be a good rule. All the elements to build the normal body should be included in the course of the three meals and should not be loaded into one meal As an example, a meal consisting of certain forms of protein, carbohydrates, mineral salts and vitamins might be well-balanced from the chemical standpoint and yet produce indigestion. Many failures to gain benefit from dieting have been due to non-observance of this fact.

In order to get the maximum amount of benefit out of the three daily meals the food should be carefully selected and combined. The more normally the digestive processes work, the more energy is left to build up health and strength. Heavy, badly mixed meals should be avoided at all costs ; they literally rob the body of health and energy. The break-fast meal is very often badly planned and the conventional meal keeps the stomach acid and disturbed for the rest of the day.

SKIN BEAUTY PROCURED BY DAILY CARE

Must Protect Complexion Against Impurities ; Soap and Water Insufficient

It is literally true that women everywhere are looking younger and more beautiful because they have learned many of the secrets of how to preserve the fine texture of their skin through the regular use of cleansing creams.

Coarseness of the skin is very largely due to ignorance of knowing how properly to care for the skin. Exposure to air, sun, wind and cold dries the skin, lines and thickens it. Smoke and soot of cities, sand and dust of the country, devitalize it, rob the skin of natural beauty. These effects of weather and climate and other agencies must be counteracted not every once in awhile, but daily, if one wishes to keep one's complexion fresh and youthful.

Perhaps there was a day when women thought that soap and water were sufficient to clean the face and to assure a healthy complexion. Are there any who still believes that the dirt and grime of the day are removed in such a manner ? Let them, then, apply a cleansing cream after they have thoroughly "scrubbed" in soap and water. Let the cream remain on the face long enough to penetrate the pores of the skin. Now wipe it off with a clean cloth, and look at the cloth ! That experiment is usually sufficient to convince even the most dubious—even the strongest exponent of the soap and water treatment.

Particles of dirt and sand, soot and every kind of impure matter are sifting into the pores of the skin all day long. These must be removed. If they remain in, of course, the pores are clogged. Coarseness, skin blemishes, wrinkles are the direct result ; loss of beauty is the eventual result.

That variety of facial cream, called vanishing cream, is a great aid in protecting the skin against the infiltration of these impurities, and is

a safeguard, too, against the effects of a harsh climate or inclement weather of whatever kind. But in conjunction with this vanishing cream, it is always desirable to use a cleansing or cold cream daily to rid the skin of those foreign particles against which the vanishing cream has not availed.

An approved method of caring for the skin by the use of these two creams is to massage the face every night with cleansing cream. Smooth the cream generously over the face, throat and V of the neck. Let is stay on a moment. Then remove both cream and dirt with a soft clean cloth. Repeat this process, finishing with a dash of cold water or a ligth massage. If the skin is inclined to dryness, let the cream stay on overnight.

The cleansing may be used during the day just as often as desired, but after each cleansing, it is well to apply the vanishing cream. Smooth just a litte unto the face, throat, arms and hands. This cream forms a splendid base for powder and rouge, but more important to the health and beauty of the skin, it supplies a coating of protection against sun and wind and climatic changss, and it keeps out much of the grime which accumulates eiher indoors or out of-doors.

Many women of international prominence have testified to the effectiveness of this method of caring for the skin. They have endorsed certain creams unreservedly.

The method requires actually only a few moments each day, and unless there is some deep seated disorder, requiring treatment of the skin, or the blood, by a physician, any woman who will faithfully follow such directions as have been given in this article can very greatly, and with surprising quickness, add beauty and charm to her complexion.

PREVENT CONGESTION DUE TO CHEST COLDS

Precautionary measures should be taken quickly for any pain or constriction resulting from cold in the chest. Often some simple but timely remedy will break up a cold completely and prevent the development of serious complications. Rub a liniment which any reliable chemist will recommend upon the chest, being careful not to massage too vigorously, else the friction will cause a blister. A good liniment will, in breaking the congestion, restore circulation and so raise the temperature of the affected portions of the body, so that poisons are carried off and normal conditions re-established.

AMENORRHEA

"OF very great importance is the Amenorrhea which results from disturbances of the various glands of internal secretion." (Graves, *Gynecology*, 2nd Edition, 1921.)

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ANDHRA AYURVEDIC CONFERENCE

Session at Masulipatam

The Tenth Andhra Ayurvedic Conference met at Masulipatam on 21st January 1929 under the presidency of N. Madhava Menon, Ayurvedacharya.

Dr. K. Ahobalarow Naidu, M. B., ch. B. (Edin.) and D. T. M. (Liverpool), Chirman of the Reception Committee, in welcoming the delegates observed : "Ayurveda is no system of theories or 'dogma' divorced of practical applicablility and use, but one which is based on what experience has proved and established after ages of research and investigation.

"Further progress would never be possible without ceaseles attempts on our part through research and experiment in every department of the science, on a par with what is being done for other systems of medicine.

"The specifics and drugs of rare occurrence, that you have been kind enough to exhibit here, have certainly inspired confidence in one and all of us that our ancient science of Ayurveda is not lost to us."

PRESIDENTIAL ADDRESS

The following are extracts from the address, delivered by Mr. N. Madhava Menon, Ayurvedacharya, President of the conference :—

"We are all assembled here, as you know, to concert measures for the promotion of the cause of Ayurveda, which was first vouchsafed to us by the great Brahman, and was, in course of time, developed and systematised by the great and inspired sages of old, Bharadwaja, Atreya and Dhanvantari for the well-being and good of humanity.

It is a matter for pride that the conference has chosen for its venue the ancient and historic city of Masulipatam which had the unique distinction of having given to the Ayurvedic world the great Pandit D. Gopalacharlu of revered memory, at whose feet I had the privilege of sitting as a student. It is he that has reclaimed Ayurveda for us from centuries of oblivion in the past.

Ayrveda has suffered an irreparable loss in the demise of Dr. K. D. Shastry, M. D and the Raja of Panagal. We owe to the Raja Saheb the establishment of a Government College at Madras for Ayurvedic research and studies and it can never be forgotten that the movement had received considerable impetus at his hands in recent years.

SIGNIFICANCE OF AYURVEDA

'Ayurveda' is a compound of two words, namely, 'Aur' and 'Veda.' It deals with the problems confronting our physical existence and tries

to discover what is conducive to our well-being. That is 'Ayurveda' which helps man not merely to live a life of health and vigour, but to prolong his life as well. Its outlook is preventive and therapeutic and not simply therapeutic as some other systems seem to have.

PHYSICIANS' DUTY

It is laid down in Ayurvedic works that a physician is not expected to use his healing art for making a large fortune. "He is to treat the sick as his own children and cure their ills."

Vagbhata has enforced a high standard of moral and spiritual level in the physician when he says that cruelty, excess of passion, tale-bearing, verbal violence, ingratitude, treachery, jealousy and incorrect khowledge can never be associated with a physician, and that he is permitted only to accept from those he treats what might keep his body and soul together. 'He should return evil with good' and 'treat even his enemy as he would his friend.'

DIAGNOSIS

It is complained in certain quarters that the method of diagnosis as recommended in Ayurveda is incomplete, evidently for want of proper touch with the system, in all its aspects.

Ayurveda sys : 'Disease ought to be diagnosed first before it can be treated.' Diagnosis is of two kinds : (1) Examination of the patient and (2) that of his disease. Examination of the patient falls under two heads :—(1) Saviraka and (2) Atmiya.

PATHOLOGY

Pathology in Ayurveda embraces : (1) Sanchaya, (2) Prakopa, (3) Sthanasamsraya, (4) Vyaktibhayam, (5) Prasara and (6) Bheda. I shall eschew consideration of details here.

ANDHRADESA AND KERALA

Andhradesa has fostered the science of Ayurveda for a long time, and it is well known that the Andhras have been given the palm since very long for their proficiency in the departments of 'Rasa' and 'Mulika' treatment.

In Kerala, which is my native province, 'Ashtangahriday' is held in high esteem. Knowledge of Ayurveda is more widespread in Kerala than in several other parts of our country, because the percentage of Sanskrit-knowing people there is higher compared with that in other provinces.

The line of treatment generally in vogue in Kerala and in particular the systems of 'Chikitsa' known as 'Dhara', 'Pizhitchal', 'Navarakkili', 'Sirovasti', 'Pichu' and 'Tala potichal' are of special interest to students of medicine.

CONCLUSION

Opinion is divided on the question, as to whether we might or might not revise our old theories set forth in Ayurvedic works in the light of modern investigation, carried on by scientists and thinkers, in the field of medicine elsewhere.

My own humble view is that we would gain nothing by borrowing from other systems what would enrich our store of knowledge, so long as we do not surrender our self-respect therewith, and the prestige of our Ayurveda, in slavish imitation of what is not material to the advance of our indigenous culture.

Charaka bears testimony to the fact that our forefathers freely borrowed from other systems what they did not find in their own and that they later improved upon it. I cannot forget to impress upon the public mind the paramount need for propaganda in this behalf. It should serve not merely to popularise Ayurveda, but also to educate the Ayurvedic physician in what is expected of him to keep up the prestige of his science.

I close with the appeal, once more, that the banner of Ayurveda cannot be held aloft, unless Ayurvedic scholars and doctors co-operate to inspire confidence in the minds of the public by what they might achieve in future, in the direction of contributing to rhe progress of the science by their wise researches and investigations in the field of Ayurvedic medicine, which they claim as the ancestral heritage of us all.

RESOLUTIONS

The following are some of the resolutions passed :—

This Conference places on record its deep sense of sorrow and loss at the untimely demise of Lala Lajpat Rai, Hakim Ajmal Khan, Raja Saheb of Panagal, Mr. Duggirala Gopalakrishnayya, Mr. K. Pattabhiramayya, Dr. K. D. Sastri, Mr. N. Lakshminarayana, Mr. E. V. Subbayya and Mr. P. Satyanarayana.

This Conference appeals to the Government to make provision as early as possible for graduates in Indian medicine to take to post-graduate courses of study in Western medicine also.

This Conference emphasises the paramount need of organising propaganda in the direction of popularising Indian medicine by all desirable means.

It is hereby resolved that the name of this Parishad be changed into "Andhra Ayurveda-Unani Vaidya Sammelanam" (so as to allow scope for Unani doctors also to join the Parishad).

Another resolution moved by Mr. Madhava Menon recommending the formation of an All-India Vidyavidwat Parishad was also passed. It was proposed that the first session of the above Parishad (to be formed) be held in Andhradesa. The following committee was

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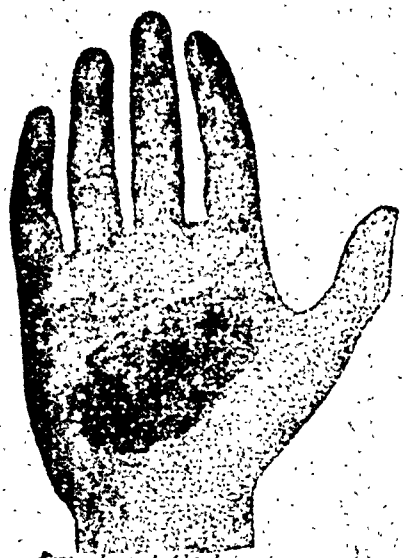

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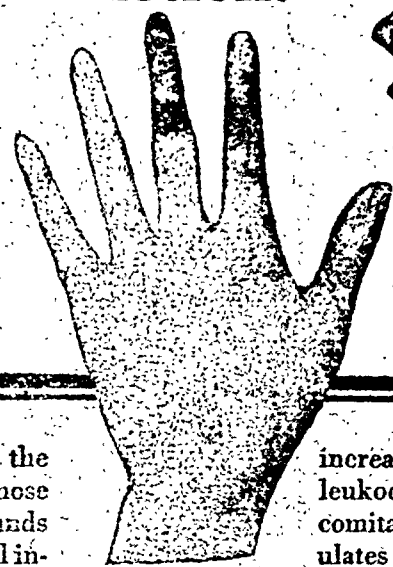

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or the Hindu System of Medicine.

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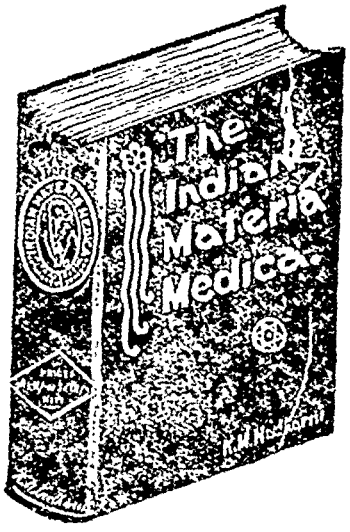

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THE JOURNAL OF AYURVEDA

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Retsospect

In response to our appeal for reports from Ayurvedic Institutions and Charitable Dispensaries, we have received, besides those already published, reports from Kottapatam, L. F. Dispensary and Dayanand Ayurvedic College, Lahore for the year 1928-29.

The report shows that the Local Fund dispensary at Kottapatam is making a steady progress under the able guidance of Dr. N. Keshava Charlu, A. M. A. C., L. C. P. S., the medical officer in-Charge. The Dispensary has got its own building and a nice little herbarium. It is significant to note that the physician in-charge has been successful in course of three years to induce the local people to take to the Indigenous system of treatment, while Allopathic treatment is taken recourse to only in rare neccessity, and that too in surgical cases. The number of patients treated during the year was 16,770 as against 16,518 during 1927-28. We cogratulate the Taluk Board as also the medical officer for the good work they are doing towards upholding the good name of Ayurveda. It might not be forgotten in this connection that the regeneration of the idigenous system of medicine in Madras owes much to the Government of Madras, which is the pioneer Provincial Government to recognise the claims of Ayurveda.

Apropos is published the annual report of Dayanand Ayurvedic College, Lahore for the year 1928-29. The College has got two courses which might be termed as junior and senior courses. The first course is named

Viadya Kaviraj and lasts for two years while the second is termed Vaidya Vachaspati and is of 4 years.

The College is no doubt well equipped with every thing and possesses a good number of teachers, besides Indoor and Out-door Hospitals, Dissection room, Laboratory, etc. But the number of students in the whole institution is only 110, a figure not very promising indeed. We hope the authorities shoud pay more attention to this side of the shield.

In direct contrast to the paucity of students in the College, we find that the two out-door dispensaries attached to it are doing a very great work. The number of patients treated in the indoor hospital during the year was 184 as against 175 during the preceding year while that in the out-door dispensaries was 26,686 as against 17,468 in the preceding year. From figures quoted just now, we have no doubt to conclude that Ayurveda is gaining back its former reputation among the people of India. We congratulate the management of these dispensaries for their progressive work in the right direction and hope the College will imitate this example by paying more attention to secure students than to equipping the College with base materials.

We hear of "Acharya Dhanwantari Mandal," a Society established for Research work in Ayurveda at Phagwara in Kapurthala State with Kaviraj Shivsharan Varma, Vaidya-Ratna, Ayurveda-Visharad, etc. as Managing Director. The Society is in its infant stage and it is very difficult to predict anything at the present time. However, let us hope, it will prosper and do some real work for the revival of Ayurveda. We already possess its first fruit, namely a book in Hindi on Bandaging, a review of which appears elsewhere in the present issue.

It is quite significant to mention that in Madras as also in some other provinces, Local, District and Union Boards have established and been maintaining Ayurvedic, Sidha and Unani Charitable Dispensaries

under qualified physicians. We congratulate these provinces for their move in the right direction. But when we come to Bengal, we find that except the Calcutta Corporation, which subsidises and maintains a few Ayurvedic dispensaries, there is not a single Ayurvedic institution or dispensary throughout the whole province receiving any grant-in-aid from any local or union board. The reason of this humorous anomaly is evidently due to the stern fact that Bengalee Vaids are proverbially lethargetic and lifeless. They are also lacking in the spirit of trade unionism and will remain content with their own practice without ever caring to improve the status of the profession in general. With the death of late lamented Kavirajes Jaminibhusan Roy, M.A., M.B. and A. C. Bisharad, M.R.A.S., the spirit of concerted work and sacrifice for common good is fast dying away amongst the Kavirajes of Bengal. It will not be out of place here to say that we could get only a single article for publication in course of the last year from the pen of a Bengalee Kaviraj! The boast of Bengal as the seat of best Ayurvedists is at stake and if things move on in such a way, we have no doubt that Madras will secure the title in the near future.

A bird whispers into our ears that all is not well with the affairs of the Jaminibhusan Astanga Ayurveda Vidyalaya and Arogyasala. There have cropped up two distinct parties under the patronage of two great pillars of the institution and one is trying to oust the other. The trouble, we understand is due to the domineering power of a lay man in the committee and it is apprehended that if some rapproachment is not effected by outside intervention, the College might lose the services of many illustrious teachers. However, let us hope that the trouble will be over soon and there will be nothing prejudicial to the best interest of the College.

Now about the progress of the Indigenous system of Medicine. The first session of the Ayurvedic Conference

was held in Madras during the Congress week in December 1928 with Dr. K. D. Sastry of Delhi in the chair and it was decided that a conference of all the practitioners of the profession should be held every year to discuss problems affecting them. We are also in possession of the reports of the Nineteenth session of the All-India Vaidya Sammelan at Nasik and we are glad to note here that something practical was done there, unlike other conferences, where only paper resolutions were passed. A prize of Rs. 500 for the best essay on Tridosha was declared and we understand that only 12 essays were submitted. The result of the competition is not yet out and we hope to publish the name of the fortunate receipient in a later issue of the Journal of Ayurveda. The paucity of competitors for the essay is entirely due to the rigid conditions laid down by the authorities under which the article was to be written. We are quite anxious to possess a copy of the prize essay as we have a great curiosity to see how an article written under the conditions laid down stands in comparison with the modern interpretations of the Tridosha theory. Besides, the article was to have been written in Sanskrit which is a great handicap to men like ourselves. We appeal to the members of All-India Vaidya Sammelan to modify the rules in cases of future competitions so that essays might be written in English as well as in Sanskrit.

In this connection, we mourn the loss at the untimely death of Lala Lajpat Rai, Raja Sahib of Panagal, Maharaja of Nadia, Hon'nble Sir Nawab Ali Choudhuri, Kt, Mr. Duggiral Gopalakrishnayya, Dr. K. D. Sastri, Mr. N. Laxminarayana, Hon'ble Justice Gokarannath Misra and Mr. E. V. Subbayya who were all friends, lovers and patrons of Ayurveda and to whom Ayurveda owes much for its present regeneration.

H. N. C.

Original Articles

FEVERS IN AYURVEDA

BY

ASHUTOSH ROY, L.M.S. (Hazaribagh).

Definition :

The disease known as fever is characterised by absence of perspiration, increase of body heat over normal, derangement of organic function due to increase of internal heat including depression of spirits. Sometimes there is pain all over the body (*e.g.* Influenza, a variety of Vayu fever).

Classification

The classfication of fevers, as in every other disease in Ayurveda, is based on the derangement of the three doshas, Vayu, Pitta and Kapha singly or in combination (in acute fevers) resulting in derangement of organic functions only.

When the fever is continued for some time and becomes intermittent or chronic, there is structural or organic tissue derangement besides those of functions. There are therefore derangements of dhatus (tissues, structures of organs) following derangements of doshas.

Seven dhatus had been described as follows :—

(1) Rasa or chyle
(2) Rakta or blood
(3) Mansa or muscular tissue
(4) Meda or fatty tissue
(5) Majja or bone-marrow tissue
(6) Asthi or bony tissue
(7) Sukra or Testicular secretion.

Just as in modern medicine blood is considered broadly as a tissue because it supports the system, so for similar reasons perhaps chyle and testicular secretion besides blood are considered as tissues in Ayurveda. These are therefore liquid tissues.

FEVERS DUE TO DERANGEMENT OF DOSHA

(*Acute Fevers*)

(i) Due to derangement of one dosha :—

(*a*) Vayu fever
(*b*) Pitta fever
(*c*) Kapha fever

(ii) Due to derangement of two doshas in combination
- (a) Vayu-pitta fever
- (b) Vayu-kapha fever
- (c) Kapha-pitta fever

(iii) Due to derangement of three doshas
- (a) Sannipat fever
- (b) Agantuk or Surgical and accidental fevers.

FEVERS DUE TO DERANGEMENT OF BOTH DOSHAS AND DHATUS

(*Chronic fever*)

- (a) Chronic fevers or Jirna Jvara
- (b) Long continued chronic fevers or Ati Jirna Jvara.

It will be seen from the above that unlike modern medicine, Ayurved studied fever from the point of view of soil (Human organism) and not on the seed or the causative factors of disease, *e.g.* agents which cause infection and intoxication.

CERTAIN TERMS CONNECTED WITH FEVER

Shyam Jvara & Niram Jvara—These refer to two stages of the same fever. The former indicates two first stages when fever is progressively rising. The latter indicates the second stage, when the decline has commenced till the patient enters the stage of convalescence. We will refer to these again in discussing the etiology of fever.

Sita-purba & Daha-purba—These terms are applied as the fever starts with chill (Vayu deranged) or heat (Pitta deranged).

Prakrita & Baikrita—The former means seasonal fevers and the latter, fevers out of season. We now know, for example, that Eruptive fevers occur in spring while Malaria, Typhoid, etc. in the rains. When an Eruptive fever, instead of appearing in spring, appears at any other season of the year, it is not Prakrita but Baikrita. A prakrita fever has a better prognosis than the other one.

Antar-beg & Bahir-beg—The former refers to fevers in which the skin temperature is less while the internal heat is more, the latter refers to the opposite condition. Naturally there are more complications in the former than in the latter, though the fever is apparently higher in the latter. These are applied with special reference to subacute and chronic fevers.

Ratri-Jvara & Diva-Jvara—These terms, as their names indicate, are fevers coming at night and in the day time respectively.

Ardha Nariswar Jvara—This refers to a peculiar fever in which one half of the body is heated, the other half being cold. It means vaso-motor disturbances (excitation at one side of the body and depression at the other). The fact that the symptoms are limited to one half of the body means lesion in the brain.

Antar-dhatustha or Gambhir fever—Fever associated with burning sensation inside with cough and respiratory defficulty. Probably it is tuberculosis.

DURATION OF FEVERS

According to duration, fevers are classified as follows :

Acute fevers.	(*a*) Tarun Jvara	...	leaving off in 8 days.
	(*b*) Madhya Jvara	...	„ 9-12 days.
	(*c*) Puratan Jvara	...	„ 13-21 days.
	(*d*) Jirna Jaara		beyond 3 weeks.
	(*e*) Ati Jirna Jvara	...	chronic and long continued. These may end in dropsy, tuberculosis or cachexia.

ETIOLOGY OF FEVERS IN GENERAL

Irregularity of diet and habits irritates the doshas which first affect the stomach and digestion is interfered with. The resulting chyle which is abnormal (loaded with toxic products of imperfect digestion) irritates the abdomen (heat-producing centre in the solar plexus) and heat is produced in excess (much acid toxins are produced). The impure chyle goes through the "Rasabahini Nadi" (Lacteals) to the heart where it mixes with the blood making it impure (reduces the alkalinity of the blood). This impure (heated) blood in its passage from the heart to the rest of the body irritates and heats it resulting in fever. On account of the rise of skin temperature, perspiration stops. On account of the rise of internal body heat in the organs and structures, the various secretions and excretions are diminished, so that the digestion is upset, constipation results and the urine is reduced in quantity, etc.

The different kinds of fever are due to derangement of the different doshas in different degrees upon which the particular symptoms and the duration of the fever depend. When one

dosha is deranged and the patient does not take particular care of himself but continues his irregularities in diet and habits, other doshas are involved, so that a simple uncomplicated fever is converted into a complicated one. We shall discuss later on the particular kinds of irregularities in diet and habits which affect particular dosha or doshas in the beginning.

As a result of fever, the tissue vitality is lowered and if this continues for a long time, the tissues and organs are structurally affected resulting in chronic fevers in which both dhatus and doshas are affected. The symptoms and complications depend on the particular dhatu or dhatus affected.

The question of death or recovery from an attack of fever depends on the question of vitality or resisting power. If the vitality is much lowered, the result is death. If the derangement is removed and the vitality is raised, the patient recovers.

Sometimes the fever is intermittent and at other times it is remittent and the course of fever is prolonged. It is known as "Ati-Jirna Jvara" which may end in dropsy, cachexia or tuberculosis, ultimately killing the patient.

It appears that fever according to Ayurveda is the result of auto-intoxication from the intestines (dietetic factor), seasonal influences, certain irregular procedures which may affect the nervous system or the Endocrines, *e.g.* emotions exciting the Adrenals.

Modern Medicine says that intoxication may result from absorption of toxins not only from the great cess-pool of the body, but from other nooks and corners, *e.g.* the tonsil-, the teeth, the gall-bladder, the prostate, the rectum, the nasal sinuses, the Urinary tract besides the G. I. tract.

Whenever the system is intoxicated, the pitta or katabolic Endocrines, *e.g.* the Thyroid, the Adrenals are excited to hyper secretion. These are stimulated by the generation of acid-toxins (pitta).

The Tridosh equilibrium is upset as a result of excitement of one dosha as the case may be.

Thus acid toxins are katabolised by excess secretion from katabolic Endocrines, resulting in fever which, up to a certain limit, is beneficial to burn out the toxins.

When the vitality is much depressed as a result of toxaemia, it means Kapha irritation The secretions and excretions are upset and reduced.

The regulating "Vayu" may also be primarily affected by toxins affecting the Nervous system direct.

PRELIMINARY SYMPTOMS OF FEVER (*Purbarup*).

These are produced when the Tridosh equilibrium (Health), is just beginning to get upset. These may be as follows :

Lassitude of body, depression of spirits, dryness of skin, and mouth, watery eyes, alternate sensation of heat and chill, heaviness and pain over the body, chilliness of skin, etc. (acid intoxication).

If these are associated with

(*a*)	Much yawning	...	Vayu fever results
(*b*)	Loss of appetite	...	Kapha "
(*c*)	Burning of eyes	...	Pitta "

PREDISPOSING CAUSES OF FEVERS.

(*a*) *Of Vayu fever*—Vayu is normally aggravated in the rains (seasonal influence) by "Rukshakriya" or procedures which irritate the nerves, *e.g.* hard work, exposure to chill, long walks, starvation without elimination (of toxins produced as a result of Katabolism of the body tissues), emotional excitement or depression (the Sympathetic Nervous System is deranged).

(*b*) *Of Pitta fever*—Pitta is normally aggravated in autumn (seasonal influence) by pertaking in excess of bitter and acid articles of diet, by emotional excitement (adrenals irritated), if one does not relieve his thirst or hunger, as a result of injury (causing inflammation and congestion), by exposure to the heat of the Sun (in the tropics).

(*c*) *Of Kapha fever*—Kapha is irritated in spring (seasonal influence) by pertaking of excess of sweats and soothing (sneha) things as also exposure to cold (the peripheral blood vessels are contracted and blood goes more to the internal organs producing congestion).

I. SYMPTOMOLOGY OF FEVERS (*Rupa*)

(*with one dosha deranged.*)

The symptoms do not appear at the same time nor do they all appear in the same patient.

(*a*) *Vayu fever*—it begins with shivering. There is irregularity in appearance and disappearance of fever from different parts of the body ; the body heat begins to increase from one part of the

body (higher or lower) and then spreads throughout. The height of the fever varies at different times. There are dryness of lips, tongue throat and skin and pain all over the body, specially marked in the head or chest or abdomen with constipation, and rumbling in the bowels. The duration of fever is up to seven days and the patient gets rid of the fever on the eighth day.

(*b*) *Pitta fever*—The fever heat begins simultaneously all over the body and the degree of heat is excessive (high fever). There are much burning of the body and eyes, severe thirst, bitter taste in the mouth, nausea and vomiting (much upsetting of the stomach). There are slight snatches of sleep, some dilirium when temperature is high and occasional perspiration. There is slight yellow colour of urine, faeces and eyes. There may be erythematous rash in mouth, neck and on the lips and nose. The patient is very restless and longs for cold drinks and lying in cool place. Its duration is up to ten days and the patient is free from fever on the 11th day.

(*c*) *Kapha fever*—The temperature is moderately high, there are chilliness of the skin, lassitude and heaviness of the body, watery secretion from nose and eyes (coryza), cough, sweet taste in mouth, want of appetite, fullness of the stomach, nausea and vomiting, impairment of digestion and excess of sleep. Colour of urine, faeces and eyes is white. The duration of the fever is 12 days.

These are instances of simple continued fevers without much complications. Before the advent of bacilli and bacteria in modern medicine, similar classifications of simple continued fevers in the Tropics are presented by European writers.

Annesley in 1828 classified simple continued fevers as inflammatory, bilious and malignant. Day and Morehead's classification of these fevers in 1859 are pulmonary (Kapha), abdominal or circulatory (Pitta) and Nervous (Vayu) fevers.

Crombic so late as 1894 described simple continued (Vayu) fevers of 3 to 8 days duration.

MODERN CLASSIFICATION

Sir Leonard Rogers classifies special tropical fevers into :—

Fevers of Short duration, e.g. Malaria, Dengue, Plague, Heatstroke, unclassified fevers, *e.g.* 3 and 7 day fevers, Cerebro-spinal fevers Influenza, Exanthemata.

II. Symptomology of Fevers

(with 2 doshas deranged.)

These are more complicated. These are Vayu-Pitta, Vayu-Kapha and Kapha-Pitta fevers. Their duration does not exceed 10 days. They are also simple continued fevers.

(*a*) *Vayu-Pitta fever*—Besides fever, there are, in it, thirst with dryness of mouth and throat, anorexia, nausea and vomiting ; chilliness inside and burning outside, loss of sleep, occasional swooning of the patient (heart depressed), begins with much yawning and with pain in head or joints. There may be some dimness of vision. There is great disturbance of organic function. Patient longs for cold things. The duration of the fever is 7 days like that of Vayu fever.

(*b*) *Pitta-Kapha fever*—The mouth is moist but it has a bitter taste ; the patient feels thirsty inspite of moist mouth, there are anorexia, cough, sleepiness with transient loss of consciousness (severe toxaemia), sensation of alternate heat and chill. Duration 7 days as in Vayu fever.

It seems that Vayu if simply deranged is regulated in 7 days. So also Vayu-Pitta and Kapha-Pitta.

(*c*) *Vayu-Kapha fever*—Moderate heat and perspiration, coryza, cough, chilliness of skin, pain in head and joints, excess of sleep, desire for hot things besides fever.

Duration 9 days.

Analogy of Classification of Modern & Ancient Nomenclature of Fevers

(1) Simple intermittent Malaria—Vayu or Vayu-Pitta fevers.
(2) Dengue—Vayu or Vayu-Kapha fever or Vayu-Pitta fever when there is rash.
(3) Plague—Bubonic form (Vayu-Pitta.)
Septicæmic form (Vayu-Kapha.)
Pneumonic (Kapha-Pitta.)
(4) Heat Stroke and Sun Stroke—Vayu fever.
(5) Three, seven and five day fevers—Vayu fever.
(6) Cerebro-spinal fever—Vayu or Vayu-kapha fever.
(7) Influenza—Nervous form (Vayu fever)
Catarrhal form (Kapha fever)
Gastro intestinal form (Pitta fever).
(8) Exanthema—These are separately classified among fevers in Ayurveda.

(9) Bisham Jvara—Intermittent malaria (separately classified).
(10) Sannipatik—Tropical fevers of long duration.

III. SYMPTOMOLOGY OF FEVERS WITH TRIDOSH DERANGED (SANNIPAT)

Fevers of longer duration and more complicated

These fevers may be divided into the following groups :—

(*a*) In which all the three doshas are equally affected. They are of three kinds according as the derangement of doshas is slight, moderate or severe.

These may be represented by the following formulas

$B^1P^1C^1$

$B^2P^2C^2$

$B^3P^3C^3$

B, P and C represent Vayu, Pitta and Kapha respectively and 1, 2 and 3 represent degree of derangement, mild, moderate and severe respectively.

Symptoms—alternate heat and chill, pain in the bones and joints and head, watery eyes which are red and hazy, dilated or contracted, pain in the ear, Tinnitus aurium, sleepiness, swooning, delirum, pharyngites, cough and respiratory trouble, anorexia tongue congested with enlarged papilla, giddiness, want of muscular tone, slight vomiting of mucous and bile, head may be moved too and fro, loss of sleep, pain over the cordiac region, slight perspiration, urine and fæces passed in small quantities with difficulty at long intervals.

(*b*) In which two doshas are equally affected, but the degree of derangement of each is less than that of the third. These may be of 3 kinds :—

(i) Batolyan—3 sub groups
or Bisphorak $B^2P^1C^1$, $B^3P^1C^1$, $B^3P^2C^2$
Vayu more deranged than the other two.

(ii) Pittolyan—3 sub groups
or Asukari $P^2B^1C^1$, $P^3B^1C^1$, $P^3B^2C^2$
Pitta more deranged.

(iii) Kapholyan—3 sub groups
or Kampana $C^2P^1B^1$, $C^3P^2B^2$, $C^3P^1B^1$
Kapha more deranged.

(To be continued.)

NATIONAL HEALTH

CAUSES OF DEGENERATION AND REMEDIES

(With compliments from Andhra Medical Journal)

—:o:—

INTRODUCTION

I have divided the causes of the Degeneration of National Health in India under five headings :—

1. Neglect of Indian Culture, which includes neglect of the study of Indian Medicine and the simple hygienic rules of conduct contained in the Indian Medical system.

2. Neglect of the system of Physical Culture, original to India.

3. Unsuitability of the present curriculum of Education and of the working hours.

4. Poverty, due to continuous drain of the economic resources of India, leading to Deserted Villages and Over-crowded Cities.

5. Social Evils such as Early Marriage, Venereal Disease, Alcohol, Tobacco, Opium, Tea and Coffee.

CHAPTER I

NEGLECT OF INDIAN CULTURE

Devolopment of Medicine in Ancient India

The first cause of the degeneracy of National Health is the negligence of the people to study Indian literature, including Indian medicine. The system of treatment was developed in India probably thousands of years ago, at a time when the Indian civilization was at its height under the patronage of Indian rulers. The pride that the foundations of our knowledge are based on the researches of our ancestors gives us a creative genius. A country that has produced a physician and philosopher like Charakacharya and a surgeon like Susruta, at whose feet scores of foreign students sat for their cultural development, provides us ample scope for original research. We learn that in the time of Asoka the Science of Medicine was developed to a great extent. "There was a State Pharmacy where mediciness were prepared. Marginal furrows between any two rows of crops were utilised for the plantation of fragrant plants, medicinal herbs and the like. Such medicinal herbs that grow in marshy

lands were grown not only in grounds suitable for them, but also in pots (Sthalyam)—*Kautilya's Artha Sastra*, Page 145.

Village Physician : Old and New

In the pre-British days, every village had at least one physician, and his prosperity, as of every other village official, depended upon the prosperity of his village and not upon the number of sick people treated by him in each month or year. He was responsible for the continued good health of the families that fell to his share, as his emoluments depended upon their satisfaction. But to-day, the physician does not so much look to the people for his maintenance, as he is paid by some one else. The Doctor, who is really a servant of the people, poses now to be their master and that happy idea of being serviceable to his fellow-beings has disappeared. The Doctors know that prevention is better than cure ; but most of them, either because they have no time to devote to the preventive part or because it does not pay them to do so, are criminally negligent to that part of the treatment which teaches people how to avoid so many diseases to which they are subjected in their daily life.

Propaganda Work in Asoka's Time

Our ancient kings educated the people to be religious, charitable and sympathetic. Asoka made it the business of his life to employ his power over a vast empire in the teaching, propagation and enforcement of the ethical system, which he called the Law of Piety of Duty. "He proclaimed these principles of rules, which might guide the people's conduct, in a series of edicts, more than thirty in number, engraved upon rocks, pillars, boulders and cave-walls. The edicts are devoted mainly to the exposition, inculcation and enforcement of a scheme of practical ethics or rules of conduct called 'Dharma.' The area covered by his inscriptions comprises nearly the whole of India, extending from the Himalayas to Mysore and from the Bay of Bengal to the Arabian Sea. These inscriptions designed for public instruction were placed either in suitable positions on high roads or at frequented places of pilgrimage where their contents were ensured the greatest possible publicity. All these are written in various forms of Prakrit, *i.e.* vernacular dialects. They were, therefore, obviously intended to be read and understood by the public generally and their existence presupposes a widely diffused knowledge of the art of writing."—(Vincent Smith.) The king enforced the ethical system by imposing heavy penalties on those who disobeyed the rules. We see a close similarity between the

inscriptions laid by Asoka and the directions given by our ancient medical authors. They cared very much for healthy living, wholesome food, fresh air and pure water and rules were made to protect them. In *Artha Sastra* we find that very severe punishments were inflicted for the infringement of the laws of cleanliness and hygiene.

Pillar Inscriptions and Edicts

There are references to a stone pillar at Pataliputra, said to have been inscribed by Nagarjuna, the famous physician, for treatment of eye diseases and prevention of cataract.

This is a prescription of a medicinal *varti* or stick for touching eyes, inscribed at Pataliputra, Asoka's capital. Its application along with the fresh juice of *Lodhra* is said to prevent the formation of cataract.

In his Kalinga edict Asoka says "All men are my children; and just as I desire for my children that they may enjoy every kind of prosperity and happiness in both this world and the next, so also I desire the same for all men. Everywhere has His Sacred and Gracious Majesty the King made two kinds of curative arrangements, *viz.* curative arrangements for men and curative arrangements for beasts."

The negligence of this system of Indian Medicine, which had spread throughout the nooks and corners of the country, has brought degeneration in the health of the Indian people to-day.

EDUCATION IN ANCIENT INDIA

It may be mentioned that every kind of literature, not only medical books, contains information which is most suitable for the physical, mental and economic growth of the people. This literature is divided mainly into three classes—Dharma Sastras, Artha Sastras and Kama Sastras and it is enjoined on every one not to stick on to the study of one science, but to have a general knowledge of all the sciences.

"In ancient India there was an organised system of popular education. At seven years of age they passed on to the study of the five *sastras* or the sciences, beginning with grammar. The second sastra was the science of arts and crafts, the third was the medical science, the fourth was logic and the fifth, the principles of philosophy. All these departments of knwledge formed a system of general education for the early centuries sects. The Indian

educationists of the early centuries seem to have devised a system of public instruction far superior to that of the present day."

(E. B. Havell).

Thus at the age of 12 every student had sufficient theoretical and practical knowledge of the rules of hygiene and of domestic medicine, and he did not run to the physician for every little ailment.

LEARN EVEN FROM AN ENEMY

Our ancients were not averse to learning from any source whatever. Charaka says :—

'Even though the word of advice be from an enemy, if those words are laudable and are conducive to fame, long life, health and wisdom, they shall be heard and shall also be acted upon.'

'A Physician, expert in his own Sastras, and not ignorant of the principles of other Sastras, is respected by the King and his equals and shines like the flag on the battlefield.'

But now-a-days, by studying the foreign system of medicine, without knowing our own system, we are becoming mere imitators. Imitation kills originality.

RULES OF HEALTH IN INDIAN MEDICAL SYSTEM

The Indian system of Medicine is best suited to us, as it lays more stress on the regulation of the daily life of each individual than on drugs or on the treatment of diseases.

A person who is always regular in his food and habits, rest and recreation, who thinks twice before he does any act, who is not entangled in vices, who is of a charitable disposition, who treats all living beings on an equality, who is truthful, who has forbearance and who is contented with what he gets, is always healthy.

The rules of conduct have been ingrained into the minds of the people at an early age, but owing to the modern influences, the present generation of people have been ignorant of these rules and have been violating them. They therefore fall an easy prey to disease.

The objects of studying Ayurveda are not merely to treat diseases but (1) to know the duration of individual life and (2) to live a long and happy life.

In Ayurveda, rules are prescribed for our conduct from early morning till we go to bed and these rules have been made so as to suit the various occupations. The time-table of the Brahmin,

whose duty is to receive and give education, is different from that of a soldier, a merchant or a farmer. It was only the observance of these rules that enabled our ancients to live to be healthy centinarians.

I am giving below some of the rules that have been laid down by Sushruta for guidance in our daily life. Most of them are specially suitable to people inhabiting our country and do not apply to the people of other countries. So also, rules of health and habits peculiar to European climate are unsuitable to this climate. The modern fashion of adopting wholesale whatever emanates from the West has been to a great extent the cause of our National degeneration.

Daily Life of an Indian : (a) Early Rising

Wake up very early (Brahme Muhurte Uttishthet, Swastho Rakshartham Ayusshah). *Brahma Muhurtham* is 49 minutes before sunrise. In this period we will have plenty of time to look to the cleanliness of the body and to be ready for our work before sunrise. It is said that Lakshmi (Goddess of Riches) will forsake even Her Husband, Vishnu, if She finds Him asleep at sunrise and sunset.

By getting up early you not only save one or two hours every day for doing good work, but also you save your health by avoiding work in the hot hours. In Europe, people get up from their beds late, because it is more or less unhealthy to be out in the cold and misty mornings. So every country has to frame its own rules of health. Imitation in this, as in other respects, is most dangerous.

(b) Be Pure in Body and Mind

To be clean inwardly and outwardly is a religious duty of the Hindus. Cleanliness is next to Godliness. Regarding Cleanliness we need not be taught by outsiders because it is obtained by adopting the various habits and customs that have consciously or unconsciously dictated to us by our forefathers. Cleanliness is ingrained in all the habits and customs of every day life in our families. But now-a-days these habits of cleanliness appear tedious and cumbersome to the modern educated people, who thinking themselves refined and these habits as unnecessary, superfluous and time-worn, take to the unclean habits of the Westerners abandoning our good ones. The result is they fall a prey to all kinds of diseases.

Cleanliness is of two kinds—external and internal. External cleanliness is to keep our bodies clean and this includes social and communal purity. Internal cleanliness is to keep our minds pure. I give below some of the rules for external cleanliness.

CLEANLINESS OF THE TEETH

(1) Clean the teeth with fresh brush of astringent, sweet, bitter or pungent twigs. For every Rasa they have given certain properties. Fresh tooth brush should be used daily, so that there may not be any fear of contamination. If we are not able to get hold of twigs, we are enjoined to use only finely powdered, fragrant, honeyed and salted chalk powder but not harmful chemicals.

Clean each tooth separately (Ekaikam Gharshayet Dantam). Use a mirror to satisfy yourself that each tooth has been well cleaned. The modern dentist says that the tooth brush should not be used horizontally, and yet the brushes that come from the West are made in such a manner that they can be used only horizontally. But our brush made of a twig can be used vertically so as to clean each tooth separately, and so, it is healthier and more scientific than its foreign competitor.

RINSING OF THE MOUTH

Scrape the tongue with gold, silver or twig scraper and gargle mouth freely. Rinsing of the mouth has been greatly encouraged in this hot country and we have been asked to gargle before and after taking meals, before study, before and after sleep, after passing urine and stools, after bathing, yawning, clothing, walking, etc. Rinsing of the mouth not only keeps our teeth and mouth clean, but it relieves us of tiresomeness.

Mr. Harry Campbell, M. D., B. S., F. R. C. S., London, in his "Fundamental Principles of Treatment" describes the teeth of the Englishmen as follows :—We have the worst teeth of any nation. What with our misshapen jaws, decayed teeth, irregular teeth, long teeth, false teeth, we make a sorry spectacle—one which strikes the foreigner directly he reaches our shores, in a way not a little wounding to our national pride. It is a shameful and humiliating condition of things." The same author says, "The poorest Hindoo mendicant, when he begs a morsel of food asks of water with which to rinse his mouth. It is part of his religion to have sound clean teeth : to have bad teeth is a degradation from which he shrinks."

The Commission that was appointed to enquire into the causation of cancer in the mouth declared that the Indians were noted for their good and clean teeth. But now, we are having bad teeth. This is because we do not strictly observe the reules laid down by our ancients for the preservation of teeth. Take pride in your teeth and realise that beautiful teeth are an adornment and that sound teeth are useful servants requiring watchful care. Whereas the Europeans are trying to reform their habits and customs from the lessons they receive from ancient Indian culture, we are now aping them without rhyme or reason. There is no harm in imitating the Weasterner in his good qualities such as adventure and business-like habits ; but to copy his unclean habits such as taking coffee and eating before cleaning the mouth is a very unfortunate result of comradeship.

OUR GOLDEN JUBILEE NUMBER IN JANUARY, 1930.

We are glad to announce that we are going to celebrate our Golden Jubilee in January 1930. A special issue of the Indian Medical Record will be published on the occasion and life sketch of our contributors, past and present, with their photos will appear in same.

We invite the attention of our readers to this notice and request them to collaborate with us in the task before us.

The size of the issue is expected to be double that of an ordinary one and we expect to print a very decent number. Special features will be a history of the journal, life sketches of our contributors, up-to-date Medical History, articles of prominent medical men, etc., etc.

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THE DEBATABLE 'KLOMA' STABILISED

BY

DR. G. D. APTE, M.B., B.S., (Poona City)

——:o:——

The present day schools teaching Aryan medicine usually incorporate in their syllabus subjects foreign to Aryan medicine. Anatomy is taught almost as a routine and a class of people, specially the Vaidyas, prefer to dub this subject with the ridiculous title Western Anatomy. They also persuade others to believe that the Western Anatomy treats of structures irreconcilable with those dealt with in the old Eastern medical books and on this presumption they strongly advise the teaching of 'Eastern' and 'Weastern' Anatomy in water tight compartments. In view of the regeneration of Aryan medicine nothing can be more deplorable. The modern Vaidyas are on the one hand fast losing sight of the most important portion of the Anatomy treated in Eastern medicine, viz. (Purush wichaya) the notion about the metaphysical routes of the human body whereas on the other hand they preach that even the physical anatomy (Sharir-wichaya) must be essentially far too different from the gross structures described in the European books on anatomy.

The Aryans of olden times did learn the structure of the human body by actual dissection. This has been referred to in their books and generally admitted by all. The Europeans have done the same and no human sane mind can as yet conceive that the structure of the human body has gone through any metamorphosis from the Vedic times to the present day. So we must believe that the Aryans did at least know their gross structures as we see them to-day even if they did not find the otic ganglion or the carotid body. The comparative studies in the Aryan and modern literatures are wonderfully interesting and instructive. Hoernle has done an authoritative work on anatomy. After him there has been very little work in that field. The writer puts forth the following attempt for a close study by workers in the field.

About a year back, while perusing the Sharirasthan—Anatomy in Charak Samhita, some considerable time was spent in identifying the term KLOMA which has been a subject of freqent lively

discussions. The identity seeming very certain, on repeated thinking at a leisurely talk with Vaidya P. Kavade Shastri of Poona, the ex-president of A. I. A. Conference, the writer propounded his own idea on the subject. The former in his turn obliged by bringing to notice the views of Dr. Garde, Godbole Shastri (Ayurvedashrami) and V. Hariprasanna Shastri. Having gone through the whole discussion the writer held his opinion and refuted the old arguments on the subject. Thinking it very instructive, Kavade Shastri reproduced the view in extenso in a paper read before the last Ayurvedic Conference held at Nasik in 1929.

For want of space it is not worth while to reproduce at length the discussion on the subject at least in Maharashtra. The writer is not aware if there were any different views held outside Maharashtra. The discussion purports only three views—The first, a very admirably and extensively propounded one, originated from the famous Dr. Garde of Poona. The three legs on which he tried to stabilise his view were (1) extracts from the Biblical trio of Aryan medicine, viz. the works of Charaka, Sushruta and Bagbhat; (2) extracts from non-medical literature, and (3) philological findings. He particularly pressed the point that KLOMAN and PNEUMAN had a very close affinity and the former did mean to the Aryans the lungs just as the latter means us to-day. The second view tried to construe the same extracts to mean 'pancreas' for reasons best known to him, as his arguments do not show any responsibility to verification in actual findings. The third view is put forth by V. Hariprasanna Shastri of Bombay in his introduction to the book RASATOGASAGAR. He asserts that KLOMAN is paraphrased by old authors as GALANADI (GULLET tube), the latter metamorphosing to GOLNADI and then to GALL-BLADER. This is all too queer. Taking a general review of the old discussion it may be said that it tends to identify some organ situated either in the thoracic or the abdominal cavity. The writer holds quite independently that the KLOMA is situated in neither of these but is higher up and can only be identified to the portion known to the modern anatomists as 'pharynx'. Dr. Gananath Sen has just touched the sphere but is beside the mark.

It is quite unnecessary to reproduce all the extracts referring to KLOMA. A brief reference is quite sufficient. All the extracts classified describe the KLOMA exclusively and inclusively as—

1. Its site is close by the tongue, palate and gullet.
(CH.-Wi. 5-10 ; SU.-Sha. 9-12 ; A. S. Ch. 5.)

2. It is a normal site for KAPHA, purporting it is always moist. (A. S. Su.—20 ; A. H. Su.—12-3. etc.)

3. It is the site where thirst is produced.
(Ch.—Su.—17-11 ; Ch.—Ni.—5-10 ; Ch.-Chik—22-3 & 4. Su.-Ni.—9-22 ; Su.-Utt.—39-182 ; Su.-Utt.—41—21. As.-Ni.—11.) Madhav Nidan—trishna.

4. It has got circular rings-joints.
(Su.-Sh.—5-26—27 : A.S.-Sh.—5 ; Palkapya-Shalya, 9-161.)

5. It is the site of origin of 'minor hiccough.'
(Ch.-Chik—17-31 & 34 ; Sh.-Utt.—50—12.)

6. It is drawn down in a VAT disease of the heart.
(Ch.-Sidh.—9-7.)

7. It is the site of an abscess formation.
(Ch.-Sutra—17-101.)

8. It is the site of junction of two water carrying routes.
(Ch.—Wi—5-10 ; Su.-Sha.—9-12 ; A. S.-Sha.—5.)

9. It is tubular.

Dr. Garde particularly has taken two more extacts from non-medical literature. Others have utilised those in favour of their own views. They can be grouped with the last, viz. Philological basis as—

10. The description as to how the hunters prepared the game for cooking.
(Dashkumar charita—chapter—8.)

11. Description as to how organs were taken off from the beast for sacrificial offerings.

12. Philological grounds as before mentioned.

Anybody can easily find that all the above tests are simultaneously applicable to none except the view that KLOMA means 'Pharynx'. Detailed explanations about few of them would be more explanatory. No. 4 expressly refers to the cartilaginous rings on the trachea. There the word KLOMA is really used for Klomanadi, the tubular prolongation of KLOMA, thereby meaning the trachea at present. Such mention of whole for the part is not unusual in old literature. Similar circular joints are mentioned in the Eyes, Rectum and Heart. Sections of these organs do show a circular arrangement in them. In the case of

KLOMA they are mentioned to be made up of tender osseous material and the number is 18, which coincides with the present findings.

No 5. The 'minor hiccough' in every probability refers to the short cough started by irritation of the trachea as by foreign bodies being lodged in it or food or water getting into it.

No. 6. Dr. Garde has construed the word APAKARSHANA as meaning drawing whereas it realy means drawing down. The writer believes that the VAT disease referred to is aneurysm of the aorta. The older authors have always spoken of the aorta as a lotus and it is but natural for them to incorporate the stalk with the lotus, *i.e.* the aorta with the heart. It needs no explanation to realise that the drawing down and the tracheal tugging, we think of, are quite identical. This tugging is felt only in the pharynx.

No. 7. It is a curious accident that the old authors and the modern ones think of only one disease of the pharynx deserving a particular mention, that being the abscess.

No. 8. Nobody has as yet given this point the consideration it really deserves. It is well known that in the embryo there appears a cavity named as Coelom and stomodeum. Later, a vertical septum makes its appearance dividing the original tube into two portions, the anterior being the trachea and the posterior the œsophagus. The pharynx lies at the root of these two The lungs appear at the lower end of the trachea. Furthurmore, the serial order in which the organs in embryonic life make their appearance as described in old or modern books is the same, viz. Navel, Heart, Coelom ; (NABHI, HRIDAYA, KLOMA.)

No. 10. The description in Dashakumar-charita is not in any way different from what is being done actually by the butchers at present. The same method can be seen in only a more systematised and refined form in the post-mortem examination conducted by technical people in these days. It consists mainly of removal of hair and skin, cutting the breast-bone and extraction of nearly all the contents of the thoracic and abdominal cavities by holding the root of the tongue and drawing down. The words 'Apohana Nishkulikritya, etc.' are very significant and must not be loosely translated.

No. 11. Most of the thoracic and abdominal viscera seem to have been utilised as an offering. That might have been

considered as inedible. Though a few parts as liver, kidneys, etc. are eaten at present, they might not have been used by the ancients.

No. 12. Instead of accepting the views of Dr. Garde or V. Hariprapanna Shastri, it is far more consistent to believe that the word KLOMA is very closely connected with Coelom. It is accepted on all hands that the Aryan medicine greatly influenced the Greek medicine and also that the letter C in Greek was pronounced either as S or as K. So it is very natural that the word KLOMA might have metamorphosed into Coelom.

Dr. Gananath Sen identifies KLOMA with trachea, and is just aside the mark. The trachea is really the Kanthanadi—one of the tubular prolongations of KLOMA. In as far as the above 12 points simultaneously justify the identity of KLOMA to Pharynx it would be doing justice to the writings of the old authors if we fix the following terminology.—

KLOMA—Pharynx. KANTHA—Larynx. GALA—Gullet.
KANTHA-NADI—Trachea. GALA-NADI—Œsophagus.

Incidentally along with this parallelism between the old and modern anatomists the writer would like to point out another one about parts just at the other end of human body, viz. caudal end. Just as at the upper end one cavity divides into two for the intake of objects essential to life, *i.e.* food, water, air; at the other end primarily one cavity divides into two for ejecting the waste *i.e.* faeces, urine. An intelligent study of the words PAYU, GUDA, UPASTHA is but quite necessary. Another identity is about the uterus which is very accurately described in the old books. The writer will be highly obliged if those, who study Ayurveda for its scientific merits, would communicate with the writer on various subjects from the Aryan medicine.

CORRESPONDENCE

—o—

TO THE EDITOR,
JOURNAL OF AYURVEDA, CALCUTTA.

Dear Sir,

I was much interested in the two issues of your Journal viz. those of May and June 1929, which contained an article on Tridosh by Kaviraj Dhirendra Nath Roy, M.Sc. Calcutta.

He has evidently taken some pains to collect some materials but more is necessary, and I request you to carry on such investigation as is possible under the circumstances to bring out more materials which are dispersed all over the Ayurvedic texts. There are some points wherein some doubts may linger, as for instance : (1) "are the tridoshas organic bodies" ; (2) are they made up of the food we eat ; (3) are they used in building up the cells of the body and some such questions.

I hope you will publish the above in the columns of your valuable journal for eliciting opinion of your numerous readers.

Thanking you.

Calcutta,
The 27th July, 1929.

Yours faithfully,
D. N. BANERJEE.

Health and Hygiene

—:o:—

OUTBREAK OF BERI-BERI IN CALCUTTA

Some Precautionary Measures

Sj. Basanti Charan Sinha suggests the following precautionary measures against the attack of Beri-Beri :—

1. Avoid Burma rice. Don't believe the rice dealers of Calcutta when they say that their stock is of Bengal rice. Obtain Bengal rice at any cost and take *bhat* of it with *fan*.

2. Chira, better if red, should be taken with dadhi and sugar for *jalkhabar*.

3. If Bengal rice be not available nor chira, then take chapati of atta. Atta is, to some extent, indigestible and the unscrupulous dealers mix with it powdered Burma rice and soap stone.

4. Some sort of *dal* must be taken with rice or chapati as dal contains Vitamin-B.

5. Vegetables should be eaten as much as possible with their skins. Some green leaves (shak) must be eaten with every meal. The vegetables are to be eaten raw as salad if possible, or they be cooked by boiling only with spices and very little salt. Nothing fried should be eaten.

6. The juice of lemons (gonra nebu) should be taken liberally or the fresh juice of limes (kagji and pati) may be taken. Beri-beri being complicated with scurvy or scorbutic condition, the vegetables and lemon juice will do great good.

7. Meat, fish and eggs may be taken sparingly, or better be avoided.

8. Milk should be taken in the form of Dadhi.

9. Avoid the tap water for cooking and drinking purposes. Procure water from tube-wells if possible. River water or tank water may be used after boiling. If, however, the tap water must be drunk, then add to it fresh lemon juice or fresh lime juice and then drink.

It is imperative to avoid as poison polished rice, white flour (maida), barley, sago, oats, arrowroot and all imported prepared foods which profess to be good for children or adults.

The diet will not only prevent Beri-Beri but will cure it in the early stages. The heart will respond promptly, the oedema will take a little time to disappear.

CLOGGED PORES CAUSE OF UNSIGHTLY SKIN BLEMISHES

Daily Use of Cold and Vanishing Cream Necessary To Retain Natural Beauty

Many years ago, so the story runs, to make a spectacle for a king, they gilded the lithe, beautiful body of a youth in glittering gold. Too tired at night to remove the gilding, the boy went to bed with this covering over his body. Before morning, he had died. His pores could not breathe. They were suffocated—smothered.

This clogging of the pores of the face is precisely the cause of most of the unlovely complexions which mar feminine beauty. Pores clogged with dirt, dust and grease acquired from exposure to sun, wind and weather, unless thoroughly cleaned, soon develop blackheads, blotches and blemishes. Soap and water alone, no matter how vigorously you may rub, cannot remove these impurities. For those who doubt this statement, we recommend this simple experiment: Wash your face as

thoroughly as possible with soap and water. When you have finished, take a jar of good quality cold cream. Apply it generously to the face, neck and throat Let it remain on for a few moments ; then wipe off with a soft cloth. Look at the cloth. It will be discolored with the grime and dirt which was invisible in the mirror and which you thought the soap and water had completely removed.

The reason is simply that the fine oils of the cold cream penetrate deep down into the pores, bringing out all the impurities, while soap and water cleanse the surface only. Until the pores are throughly cleansed in this manner, they cannot breathe freely, the skin loses its bloom and radiance of health and a shallow, colorless complexion is acquired.

Take care of your skin, then Be sure it is always free of all damaging impurities. There is a proven method, not only of keeping the skin clean but also of protecting it against exposure and from the dust and dirt which is everywhere in the air. This method consists in the daily use of two creams ; one a cold cream ; the other a vanishing cream.

The method is far beyond the stage of experimentation. It is used by millions of women every day. It is endorsed in public prints by social leaders and cultured women of many lands. It is recommended even by royalty. These titled women tell frankly of the value they place upon the treatment and how it has helped to preserve their beauty for them.

Summarized, the treatments consist of a thorough cleansing at least once each day before retiring at night, with cold cream. Smooth the cold cream generously over the face, neck and throat. Let it stay on a moment so that the fine, penetrating oils will sink deep down into the pores. Then, with a soft cloth or facial tissue, remove both cream and dirt. Repeat the process, finishing with a dash of cold water. Preferably, this treatment should also be followed during the day after exposure to the weather.

The second part of the treatment consists of the use of a vanishing cream. Used after every daytime cleansing and always before going out, it forms a light film, protecting the face against exposure and the impurities of the air. It keeps the skin soft and supple and acts as a base for face powder and rouge as well. It is the finishing touch towards acquiring the soft, lovely complexion every woman longs to have.

IMPORTANCE OF CHILDREN'S DIET

During the first ten years of a child's life the foundation of health is laid. The dietetic urge of the world to-day may be summarized in four words : Watch your Child's Food. Proper food directly affects the health of the child and determines too the child's later development.

There is no more nourishing food than oatmeal. Oatmeal is rich in protein, the element so essential to build muscle and strength. It is protein that resupplies the body with the energy tissue lost in work and paly. Authorities say too, that protein largely influences the mental activity of both children and adults. In addition, oatmeal is rich in carbohydrates, vitamines and minerals, as well as the important Vitamine B. A certain proportion of oatmeal is known as roughage, which is extremely important to the body, lessening or eliminating the need for any other laxative

Oatmeal is readily digested in a child's stomach, yet it may be depended upon to sustain bodily activity to the utmost. It is one of the most nutritative of all cereals and wise mothers always make it a part of the daily diet of their children.

AVOID FAD DIETS : KNOW FOOD VALUES

Says one woman : "I am on a diet for my blood pressure, you know. I'm eating no meat ; no protein."

Another says ; "I am feeling so much better. I have stopped eating all starches and sugars.

Both statements are utter nonsense. Protein is vital. No one can live without it. The substance of the body is protein, and must be replenished day after day with food containing protein. And as for abolishing *all* sugars and starches from the diet—if that were true diabetes would no longer be a problem.

The moral is : if you don't know that protein, carbohydrates, minerals, vitamins are essential to living, and if you are not sure of the meaning of these terms don't begin playing with your diet ; don't experiment. Go to a doctor and ask him to direct your diet to correct whatever really needs correction. Above all, don't start some food fad without knowing exactly where it may lead you.

One thing more : No one has ever improved on the rule of three meals a day. It is founded on plain good sense, supported by vast scientific data. Don't skip any meal ; least of all, breakfast. It is the most important of all three meals. If you don't feel hungry in the morning, get up earlier, bathe, exercise, work up an appetite. Then eat a well balanced breakfast, consisting of fresh fruit, and hot cereal, not merely coffee and a roll.

You will probably search a long time to find a doctor who will not subscribe to these fact. Just ask yours sometime about breakfast, for example !

Reports of Societies, etc.

THE THIRD ANNUAL REPORT

OF

The Local Fund Ayurvedic Dispensary, Kottapatam

for the year ending with 31st March 1929.

BUILDING—The dispensary owns a neat and tidy building with a fenced compound situated free from the bustle of the town and presents a healthy atmosphere by the shades of the huge trees and a nice little garden wherein medicinal herbs are being reared.

MANAGEMENT—The Ongole Taluk Board is maintaining the dispensary and allopathic treatment in cases of surgery is also administered whenever necessary. The services of the midwife are at the disposal of the public in Labour cases.

ACCOMMODATION—The despensary has not wards for the inpatients and this question may be kindly considered and be arranged by the authorities concerned for the convenience of poor patients.

INSPECTION—As per resolution of the Taluk Board, with the sanction of the Government, Dr. Velan conducted the inspection of the institution from 6-11-28 till 12-11-28. In his inspection notes he recommended for construction of wards and quarters for the Medical officer opposite to the dispensary and was very much impressed at the attendance of patients, popularity of the institution and at the treatment given to the patients and left a word of note that this is one of the best institutions that he inspected.

The public of this place who are now residents in the city of Madras promised to meet a protion of the expenditure to be incurred in case a choultry is ordered to be constructed opposite the dispensary for the sick. The authorities maykindly do the needful.

AVADI AROGYASHRAMAM—At the request of Dr. A. Lakshmipathi Garu, B. A., M. B. C M., Bhishagratna, the public of this place contributed Rs. 35 for the Avadi Arogya Ashramam and M. R. Ry. P. Subbareddi Garu, Member, Taluk Board, Ongole, and the public of Allur supplied two Milch cows for the Ashramam.

Thanks are due to M. R. Ry. N. Ranganatham, a Vysya, of this place and now a resident in Secunderabad for the donation of a Milch cow to the dispensary itself for the sick.

BUDGET FOR 1928-29.—Rs. 80,00,000 were allotted for medical relief and one lakh and odd was to be expended for Ayurvedic system of medicine, and this shows the step-motherly affection of the Government of Madras towards indigenuous system of Medicine.

103 Ayurvedic dispensaries and 9 Unani dispensaries are working under the management of local boards in our Presidency whose expenditure is by far less than those of the Western system of medicine. A word of note is to be made to the Government for instituting a School of Indian Medicine and as per G. O No. 678. P. H., dated 11-3-29. recently issued by the Government, only those that possess degrees in the said school are to be appointed hereafter for the Rural dispensaries. Thereupon our Taluk Board authorities have appointed two L. I. Ms in the rural dispensaries at Ravinoothala and Kurumanchi in Ongole Taluk. The expenditure this year for the patients is O. O. 43 pies as per statement No. 1 published elsewhere in this Journal. As per statment No. 11, 263 operations were performed this year. The cause of Ayurveda may be made popular by the opening of Ayurvedic dispensaries in the Presidency and sufficient remuneration be given to Physicians in charge of the institutions.

OPINION

The third annual report on the working of the Local Fund Dispensary at Kottapatam reached me today. It is quite interesting to note that the institution has been doing excellent work under the management of the Ongole Taluk Board. Mr. Kesavacharlu in charge of the institution spares no pains for its working. 16,770 patients are reported to have been treated in the institution in 1928-29 as against 16,518 in 1927-28- Figures are no doubt, very large for a small town of Kottapatam and its surroundings. It augurs well that Government have been pleased to realise the importance of Ayurveda extending their helping hand to Local Bodies and that it regains its old renown gradually. I feel glad to witness that the institution which had its early days under me as Taluk Board President, Ongole, is being run efficiently. It is quite true that a well-worked institution of this type requires an in-patient ward, a maternity ward, and a children ward. I hope that the Taluk Board will kindly see its way to extend further relief in the direction.

Municipal Office,
Ongole, 29th July 1929.

(Sd) V. SREERAMULU NAIDU
Rao Sahib,
CHAIRMAN.

I. Visited and inspected the Local Fund Ayurvedic free Dispensary Kottapatam from 6th to 12th November 1928. Work is briskly carried out and with all attentions to the public. Figures for 1927-28 and up

to date show a decrease which naturally indicates the decrease in the prevailing diseases. Wishing the institution a success.

Sd. DR. VELAN.
Inspecting Officer,
Govt. Indigenous Medical Institution,
Madras Presidency, MADRAS.

II. Paid a visit to the Ayurvedic Dispensary, Kottapatam this afternoon and found everything kept very clean and tidy. The average attendance is fair. The Midwife is conducting labour cases less than the minimum prescribed for her. She should go about the village and find out frequent cases and make herself popular. I feel glad that the Doctor is running the institution on a satisfactory basis. I wish every success for the institution.

Sd. K. Jayaram Reddi
6-4-1929 Temry President, Taluk Board, ONGOLE

III. This evening I have had the pleasure of paying a visit to the Anglo Ayurvedic Dispensary at Kottapatam, and have been very favourably impressed with everything that I have seen in this institution. The building with its spacious and well ventilated rooms, faces towards the east with nothing to obstruct the free breeze from the sea, which is within a stone's throw from it. The young energetic and learned Doctor, Kesavachary, who is in charge of it, has stocked all medicines—both Ayurvedic and allopathic, required for his use and what is comparatively more interesting is that he has raised a small garden of important Ayurvedic herbs and prepared some of the medicines himself, so as to be more effective. The sight of an Ayurvedic doctor preparing medicines in such a.....dignified atmosphere is bound to revive the confidence of both the villagers and townsmen, once again in the efficacy of the Ayurvedic treatment which, for sometime past, suffered in its prestige on account of illiterate quacks. The Doctor appears to be skilful in Surgery too, as evidenced by the Surgical instruments exhibited and as regards his knowledge of the Ayurvedic treatment, he has got the advantage of heredity also, as he comes of a family of wel-versed men in the Ayurvedic theory and practice according to the ancient *Sampradaya*. The genuine and enthusiastic interest evinced by the young doctor is reflected in the popularity which he has obtained far and near among his patients and the scrupulous care and neatness with which he executes his work is bound to shed lustre on the Ayurvedic System of medical treatment of whose honour he is such a zealous unpholder. I understand that the Compounder and the Midwife are both well-behaved and of material assistance to the Doctor. I wish every succes for the institution.

Kottapatam, Sd. G. RAMA CANTHACHARLU, B.A.,
7-4-29. *Tahsildar.*

STAFF : There were the following members on the staff on 31-3-1929.

1. Ayurveda Acharya Pt. Surendra Mohan, B.A., Principal.
2. Dr. Asa Nand, M. B, B. S. Vaidya Acharya, Vice Principal.
3. A. V. Acharya Pt. Durga Datt Sharma, Professor of Nidan.
4. Pt. Har Dial, Vaidya Vachaspati, Professor of Pharmacy.
5. Pt. Som Datt, Vaidya Kaviraj, Asstt. Pharmacy Vaidya.
6. Pt. Shiv Sharma, Professor of Science and Hygiene.
7. Pt. Ved Mitra, Professor of Theology.
8. K. Kishan Dass, Vaidya Vachaspati, House Physician.
9. K. Shri Krishan Gosain, Compounder.
10. L Sarab Dayal, Head-Clerk.
11. Pt. Tulsi Ram, Pharmacy Head Clerk.

NUMBER OF STUDENTS—Complete course of training consists of 4 years, but after two years' study a diploma of Vaidya Kaviraj is given to enable students to start practice, if they cannot prosecute their studies in higher classes, known as Vaidya Vachaspati Classes. Number of students on the 31st. March 1929 was as under :—

Vaidya Kaviraj Classes	First Year	50
	Second Year	42
Vaidya Vachaspati Classes	Third Year	9
	Fourth Year	9
	Total ...	110

The number of students is growing in the institution every year. It was about 25 in 1918.

RESULT OF 1929—Out of 44 students, who appeared in the Vaidya Kaviraj, 2nd year Examination, held in April 1929, 24 passed, and six came under compartment. Out of 11 candidates of 4th. year Vaidya Vachaspati, 8 passed and was placed under Compartment.

Students are not allowed to appear in any examination privately. Of the successful students, some start their private practice and others get service in Municipal, District Board, State, or Public Charitable dispensaries in the Punjab, U. P., Delhi and else-where.

INDOOR HOSPITAL—Indoor Hospital attached to the college was built in 1924 at a cost of Rs. 50000 nearly and is equipped for medical and surgical treatment. On medical side, only Ayurvedic treatment is done. On surgical side, minor and major operations are performed on western lines. The Hospital, though situated far from the town, is

becoming popular. Number of patients, admitted during the last two years, is as under :—

Year	Total No.	Cured	Died	Discharged otherwise
1927-28.	175	149	3	23
1928-29.	184	134	5	45.

15 operations were performed. Students get good training in Clinics and Dispensing both in the Hospital and Dispensary.

OUTDOOR WORK—College has two outdoor dispensaries, viz. one attached to the indoor Hospital for patients coming from neighbouring hostels, and the other is situated in Arya Samaj Mandir, Anarkali. The number of outpatients attending these charitable dispensaries is as under :—

	1927-28.	1928-29.
College Dispensary	6414	9107
Anarkali Dispensary.	11049	17589
Total.	17463	26686

The increase in number shows the growing popularity of the Ayurvedic treatment.

City Dispensary will soon be shifted to Sutar Mandi, where building is being erected on the site given by Late Mehta Baldeo Das.

PHARMACY—The college has developed a paying concern, named the D.A.V. Pharmacy, which is growing very popular for its efficacious medicines. It is fitted with up-to-date machinery and affords good training to students in the preparation of medicines.

B. B. Dr. BELI RAM DISSECTION BLOCK—A very magnificient and upto-date building has been recently erected at a cost of Rs. 20000 donated by L. Lahori Mal Khosla, Engineer, in memory of his revered father late Dr. Beli Ram, the well-known physician of Lahore. Its foundation stone was laid by Mahatma Hans Rajji. It consists of a Dissection Hall, Lecture Gallery, Museum, a cold storey (under ground), office, etc.

The Punjab Government has very kindly arranged for the supply of unclaimed dead bodies for dissection work from Gujrat, Lyallpore and Sialkot districts.

MUSEUM AND SCIENCE LABORATORY—The college possesses a grand museum of A. V. herbs, minerals, alba, etc. Students do practical work in science laboratory and learn Chemistry and Physics a good deal.

HILL-TOUR—Students are taken to the local gardens every now and then to see plants, but thinking it insufficient, the college authorities send students of 2nd and 4th year classes every year to hills to study plants. This tour has proved very useful to students.

BOARDING HOUSE—The college has no building of its own for boarders, but one-half of indoor Hospital has been reserved as hostel; where 25 boys are accommodated. Besides this, there is another hostel called Sufed Kothi on Sandian Road. There, too, 25 students are kept. Boarders are charged Re. 1 P. M. as hostel fee.

This institution is thus doing useful work as far as it provides livelihood for youngmen and is rejuvenating Ayurveda.

COLLEGE OF INDIGENOUS MEDICINE, CEYLON

The idea of an Ayurvedic Institution first found expression in the Legislative Council in 1916 but it was not found possible at that time to persuade the Government to take an immediate step in the matter. It was the enthusiasm of Mr. K. Balasingham and his collegues in the Council that led to the adoption of the house of the motion which urged the Government either to make provision for the proper training of those, who were seeking to qualify themselves to practise Indegenous system or render adequate financial support to societies or institutions who were prepared to do so, that made the appointment possible of an unofficial committee of the council to devise a workable scheme for the purpose. The report of the committee recommends the Establishment of an indegenous College of Medicine with Hospital and Dispensary, besides providing facilities for research work soon necessitated a policy of financial Assistance on the part of the Government and an allotment therefore of the sum of Rs. 75000 out of the public funds was made to facilitate this project. A board of members of the Legistative Council for the purpose of controlling and developing the local system of indegenous medicine was then constructed with the Hon. Mr. R. Balasingham as Chairman. Because of the unflinching endeavours which the chairman and members of the committee took upon themselves to the credit of their country, that we see the college to-day, which was opened on the 10th of June by His Execllency the Governor Sir Herbert Stanley, in the presence of a large representative gathering of Ayurvedic scholars. The home of the college is a very spacious building at the Cotta Road, Colombo. The College has got about 80 students in the first year class, mostly boys who passed the Cambridge local examinations in English and Sanskrit and the rest recruited after and Entrance examination held in the college.

There is a medical garden attached to the College, a land of about four acres. The Hospital is being built up at a site by the Government. It would accommodate 100 paying patients and 50 poor in-patients. The dispensary is about to be started. Capt. Panikker is the Principal and the Senior Medical Officer of the Dispensary and Superintendent of

the Hospital. He is paid over Rs. 1000/- per month. The College has a Registrar who is a B. Sc. of London. He is the Proffesor of Elementary Science. First year course is as follows :—

MODERN ANATOMY

1 Sarira Vignana, Indigenous :—Susruta Sareeram, Ashtangahridaya Sareeram, Pratyakshasareeram 1st part.

2. Dravya Vignanam, Modern Chemistry and Physics, Indigenous :—Astangahriday Sutram, Brihannirghantoo Ratnakar.

3. Modern :—Botany, Bhaishajya Vignanam, Indiginous :—Dhamantan Nirghantoo, Astangasangraham (some chapters), Astangahridayam (Sutram) some chapters.

4. Arogya Vignanam :—Modern Physiology, Hygiene, Indigenous :—Astangahridaya Sutra, Astangasamgraha Sutrasthan.

5. Roga Vignanam :—Modern Specific Infection from Hygiene, Indigenous :—some chapters in Astangahridayam.

The College has a Library of Indigenous books on medicine mostly in Sanskrit. Several gentlemen have promised donations.

It has a Chemical Laboratory and Museum of Drugs; has good facilities for Dissection and Clinical studies, etc.

The entire thing is in course of preparation and in a few months' time this will be the best of its kind in the East. There are some new features to the College and Hospital, etc. Particulars might be supplied later on.

:o:

Reviews and Notices of Books

BRANA BANDHANA or BANDAGING IN HINDI

We have been presented with a copy of the above valuable Treatise on Bandaging in Hindi by Kaviraj Shiv Sharan Varma, Vaid Ratna, Bhishagacharyya Dhanwantary, published by the Acharyya Dhanwantary Mandal, Phagwara, Kapurthala State; Price Re. 1-6-0, unbound; and Re. 1-10-0. bound.

The book consists of about 140 pages with 70 very clear illustrations. It is a very able compilation and forms an important adjunct to Surgery. The style is so simple and types and printing so very clear that the book will be intelligible to all who know devnagri types. The illustrations bring the subject matter home even to the casual reader and we have no doubt that the book will form a very valuable manual to

beginners in Surgery as also to compounders, nurses and those who are called upon to administer first aid in cases of accidents.

We congratulate the author on his successful attempt and recommend the book to all Hindi-knowing Vaids and compounders.

Reviews and Notices of Drugs

—:o:—

OSTELIN, A HEALTH RESTORER

We have tried Ostelin in many cases where proper growth was retarded due to causes pathologically unknown. It is also of great efficacy in cases of rickets and retarded convalescence.

We had a patient, a girl, one year old, suffering from Eczema on the scalp and ears. She was cured of the disease after two months of treatment but had a very severe attack of amœbic dysentery which persisted for another two months. The result was that the girl began to wither away gradually and the prognosis became rather grave. At this stage we prescribed Ostelin, 1m. twice daily, and regulated her diet, stopping all other medicines. The convalescence was rather slow but very steady. She regained her former strength in course of two months and by continuing Ostelin for another two months you might now call her an Exhibition child. Her weight is at present double that of any average child of her age.

[*Ed. J. A.*]

YATREN 105.

(*Behring Institute, Merburg-Lahn, Germany.*)

We have had the privilege of using Yatren 105 in cases of amœbic dysentery, with or without blood. It has been found that Yatren is a very good antiseptic and a bit laxative. These two qualities combined together protect fourther injury to the instestines and clear them up of toxic products as well as the virus already deposited there. We have treated some patients with Yatren 105 alone, without the help of the needle, and we are convinced that the remedy might be freely tried in all cases of amœbiasis, although there are some instances where it should be replaced by or used along with Emetine and other medicaments. Our experiment goes to show that average cases yield very favorably to Yatren—105, just as quinine allays average cases of malaria. It is also significant to note that diet regulation, while taking Yatren—105, is not very strict, which is rather an advantage. [*Ed. J. A.*]

NOTES ON CASES

—o—

A CASE OF SPRUE

The patient had sores in the mouth, occasional diarrhœa, loss of appetite and digestion and occasional sensation of vomiting. The pulse was thin and feeble.

He was prescribed—

(1)	Yashtimadhu Choornam	i dr.
	Talisadi Choornam	i dr.
	Hamsodaka	xii oz.
		Mft. Decoction.
		Filter 10 oz. and Add to it
	Zambira	i oz.
	Madhu	i oz.
		Mft. mixture to make up 12 oz.
		1/12 the part to be taken three times a day.
(2)	Danta dhabana choornam	i oz.

One pinch to be put in 4 oz. of cold water, containing a teaspoonful of honey and to be gargled freely.

(3)	Bhringamalaka Tailam	iv oz.
		For bath every alternate day.

Diet :—Buttermilk and rice.

After using them for 4 days, the patient reported that he was much better. He was asked to continue the same.

A CASE OF ENLARGED SPLEEN

Female Age 17.

Enlargement of spleen for the past two years with the history of occasional fever was the complaint of the Patient.

He was prescribed—

Ferri Sulph	ii gr.
Mag. Sulph	½ dr.
Quinine Sulph	ii gr.
Kiratarishta	½ oz.
Madhu (add)	i oz.
	Mix. Send. 8 oz.
	1/16 the part to be taken with cold water.

20 days later, the patient appeared very much better and she had no fever. The spleen was less in size. She was asked to repeat.

DULLNESS OF LIVER IN A CHILD

Child Age 3.

The child did not relish food. He developed a liking for milk, curd and some vegetables. Digestion was poor. The stools were whitish and a deposit resembling lime was noted. It was observed that the first few drops of urine passed as soon as he got up was like lime water. There was good sleep.

Prescription :—

Jambeeradi Panakam*	½ oz.
Mag. Sulph	⅓ oz.
Panchatikta	½ oz.
Hamsodaka (add)	ii oz.

One teaspoonful to be taken morning and evening with a little water.

Report :—

After using the above medicine for a week the father of the child wrote that the colours of the faeces and urine were altered. He was advised to repeat the same.

Medical News

—:o:—

THE BLOOD NEEDS COPPER

While it was formerly held that anæmia was caused by a deficiency of iron in the diet, experiments made by the Agriculture Department at the University of Wisconsin in America show clearly that copper in food is necessary in the diet of all mammals which include man. A diet without copper means anæmia, weakened blood, and other rich food cannot take its place.

The experiments were conducted on poorly developed anæmic rats. They were placed in two sets ; one set was fed on whole milk alone which contains iron, while the other set was given whole milk plus a portion of animal liver which contains copper. The latter set recovered from their anæmia while the former maintained their dwindled condition.

Extensive analyses are being conducted in America to find out which of the food articles contain copper in an organic form. It is through the medium of these food articles that copper will be taken into body to improve the condition of blood. —"*Happy Living*"

Copper is included in some of the prescriptions for Anæmia in Ayurveda.—[*Ed. J. A.*]

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*Method of Preparing Jambeeradi Panakam :—

Juice of lemon fruits	1 lb.
Juice of ginger	¼ lb.
Sugar	1¼ lb.
Water	1 lb.

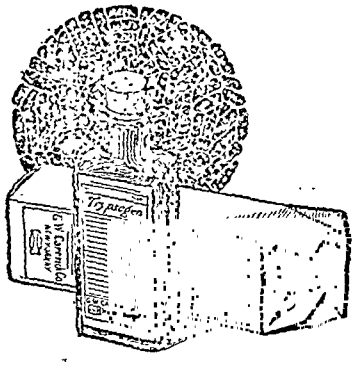
Make into syrup.

DIABETES MELLITUS

PANCREAS THERAPY has made diabetes mellitus a curable as well as a controllable disease. It is necessary, however, to use all the active principles of the pancreas to *cure* diabetes.

TRYPSOGEN

contains all of the active elements of the pancreas. It, therefore, is capable of correcting the defective digestion and absorption as well.



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"Decidedly original in style and arrangements."—*Prof Fred Thos. Robert. M.D., B.Sc, F. R. C S Emeritus Prof. of Medicine and Clin Medicine, University College, London.*

"Decidedly it contains a great deal of useful information."—*Lancet.*

"A most useful book for the practitioners."—*Surg. Genl. G. Bomford, M.D., C.I E, K C.S.I., I.M.S., (red) Physician in ordinary to H. M. King Emperor George V.*

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Works on Indian and Tropical Medicine

BY

Dr. Girindranath Mukhopadhayay, Vishagacharyya, B A. M.D., F.A.S.B.

McLeod Gold Medalist in Surgery ; Formerly Lecturer on Surgery. Calcutta Medical School and College of Physicians and Surgeons (Bengal) ; Life Member, Indian Association for the Cultivation of Science ; Examiner, Calcutta University.

I.—**The Surgical Instruments of the Hindus,** with a comparative study of the Surgical Instruments of the Greek, Roman, Arab and the modern European Surgeons.

Griffith Prize essay for orginal research for 1909. Published by the Calcutta University, in two volumes. Vol. II contains about 400 illustrations ... **Rs. 12.**
(Slightly shop-soiled copies) ... ... ,, **9.**

[In these volumes the author has completely proved the priority, and originality of the development of Hindu Surgery. In compiling these volumes the author had to consult not only the Hindu shastras and Budhistic records but also medical sciences of all ages and countries and he has displayed great erudition and scholarship.]

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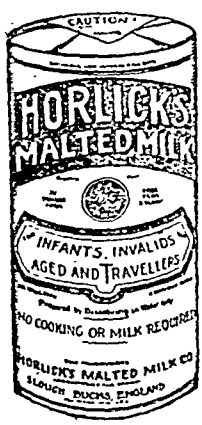

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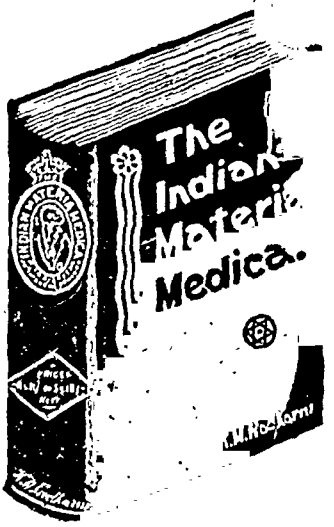

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India—The Birth-Place of Medicine.

We have times without number held out that India is the birth-place of healing art and that all other medical sciences owe their origin to this fountain head. But unfortunately our colleagues practising Western Scientific Medicine do not care to subscribe to our view, not to speak of acknowledging this debt of gratitude.

Fortunately for ourselves, the truth is becoming manifest every day to the utter disappointment of these stalwarts of scientific medicine and that too from quarters most unexpected. The following historical review from an unbiased learned English gentleman is an interesting reading and is believed to give a quitus to the critics of Ayurveda from various standpoints.

Of late befor the Indian Section of the Royal Society of Arts, London, with Sir E. Danison Ross, Porfessor of Persian and Director of the School of Oriental Studies, University of London, in the chair, Captain P. Johnston-Saint, M.A., (*Cantab*), F.R.S. (*Edin.*), I.A. (*retired*), *Secretary of the Wellcome Historical Medical Museum, delivering the Sir George Birdwood Memorial Lecture, spoke highly of the Hindu system of medicine, and showed what extraordinary advance was made, both in Surgery and Medicine, by India, when Europe was groping for light in her cradle in Greece.*

Among others, Hindus discovered the circulation of the blood; inoculation and vaccination were known; with amputation came artificial limbs; new ears and noses were formed from the grafting of flaps of skin; midwifery, including pre-natal treatments, reached a high degree of excellence, said the speaker.

"In Greek medicine, in Arabian medicine, in what we know of Egyptian medicine we find, time after time, traces of what can only have been derived from the even more ancient and famous Indian medicine," said Captain Johnston-Saint. So the parent of modern medicine is not Greece, but India; to Greece is given only the glory of nurturing and caring for the infant science.

Capt. Johnston-Saint said: "Europeans hold in the lowest esteem every pretention of the East to any real knowledge at all. The many and varied races of immemorial India Europeans thought fit to lump together as 'barbarians,' Indian medicine as a matter of childish charms and philtres, almost a sort of Vodoo devil dancings. A few inexplicable tricks the natives might have, but in the main their arts were but superstitious nonsense as compared to the blazing light of Western science. All Indian sciences were but a superstition, all its medicine but a matter of spells and charms. And this from English doctors who only recently were beginning their prescriptions with a traditional scrawl of the pious invocation 'Jupiter be propitious to us?'

LEGENDARY HISTORY.

Speaking about the value of mythology as a contribution to the study of ancient history, Captain Johnston-Saint said: "The philologist studies legends in order to fill the gaps in broken epigraphic compositions: the historian uses them to push back to their sources and to find a base whence he might move forward in search of reality. And also we find that the Self-Created Brahma, having for the guidance of the universe written the Four *Vedas* and amongst them the *Atharva Veda*, communicated them to other gods, the two Aswins or sons of the Sun becoming particular custodians of the *Atharva Veda* and thus the medical attendants, so to speak, of the hierarchy of heaven.

"Next came *Upavedas* or supplementary hymns designed for the more detailed instruction of mankind, and of these Brahma, taking compassion on man's sick, degenerate and suffering state produced the *Ayur-Veda* which contained a treatise of the science of life.

"The hymn itself in its entirety has perished and we know it but by fragments in later Indian literature, but even from this second-hand repute we are assured that for untold ages it was this *Ayurveda* that was regarded as the very foundation stone of Hindu Medical Science.

"Then at some later period, after the deluge, the *Vedas* were lost and the plight of mankind became once more a sad and suffering one. Then the gods and demons, in order to recover the lost knowledge for the relief of the suffeings of mankind, having collected plants and herbs of diverse kinds, cast them into the sea ; they took Mandara the mountain, as a churning stick ; the god Vishnu, the second of the Hindu triad, assuming the form of a tortoise, became the pivot upon which the stick turned ; Shesha, the serpent served as a cord, and the gods on one side and the demons on the other, alternately pulling on the serpent, churned the ocean until the fourteen gems or *ratnas* rose from the depths amongst which was Dhanwantari, the gods' physician and the Vedic father of medicine, with the cup of life-giving draught, *amrita*, the beverage of immortality.

DHANWANTARI.

"Dhanwantari, the Aesculpius of India, came to earth to minister to the misery and disease of mankind and to instruct them in the science of life. Unlike his brother Aesculpius, the Greek, he had not an attendant serpent, but is generally represented as a venerable old man with a book in his hand. The sages sent a deputation to Dhanwantari, requesting him to teach them the science of life and amongst the deputation was Sushruta, the founder of Hindu surgery, whom Dhanwantari selected to teach the *Ayurveda,* and who subsequently wrote a famous book on surgery called the *Susruta Samhita.*

"As Sushruta was the father of Hindu surgery, so Charaka, who also wrote a famous book on the science of physic entitled Charaka Samhita," was the father of Hindu medicine. Sushruta was essentially a surgeon and Charaka a physician, and it is from these two teachers that the Hindus obtained their science of surgery and medicine in the years to follow after.

"We cannot say with any degree of certainty whether Charaka or Sushruta was the earlier. From the point of view of literature the writings of Charaka would appear to be of an earlier style, but among the ancients it seems to have been almost an axiom that surgery comes before medicine. Dr. Wise in his 'Hindu Medicine,' says :—

> Dhanwantari asked his pupil, 'On what shall I first lecture ?' They answered on surgery, 'because formerly there were no diseases among the gods and wounds were

the first injuries which required treatment. Besides, the practice of surgery is more respected as affording immediate relief and is connected with the practice of medicine, although the latter has no connection with surgery.'

"On these and other grounds it may well have been that Sushruta preceded Charaka, but which of the two came first or whatever their precise dates may be, it is certain that their particular schools of science were early enough to have been known and appreciated by other nations. The Arabians, for instance, quoted them, and in turn were quoted by the Roman doctors. And so we have the foundations of Hindu Medical Science in these two codes, to which we might presently add a third in the treatise called the *Nidan* or diagnosis, each of them in turn based upon the *Ayur-Veda* and quoting liberally from it and amplified in the Brahmanas, or commentaries of the period, one may term the Hindu Middle Age.

SUSRUTA.

"Susruta, according to the Hindus, was the son of Vishvamitra, a contemporary of Rama. Precisely when he may have lived we do not know. Sir William Jones places the subjugation of India by Rama about the year 2000 B.C. On the other hand some philosophic scholars assert Sushruta to be a contemporary of the Buddha. As many Vedic hymns are ascribed to him, it follows that he must have flourished during the Vedic Age. Under his 'code,' to use a convenient, even though not altogether accurate term, the eight books of the *Ayur-Veda* fall under six main headings. It is the two surgical chapters of the *Veda* with which he chiefly deals, though, as is common even to-day, the surgeon also treats to some extent of medical ailments. The first of the six chapters is all surgery proper, but includes observations on climate and on food as affecting health. The second chapter deals with ailments brought about by vitiated humours ; his third we migh roughly translate as anatomy ; his fourth as therapeutics ; his fifth as toxicology and his sixth and last is supplementary, dealing with various local diseases.

"It is, however, surgery in which Sushruta specialises, calling it the fist and best of the medical sciences, less liable than any other to the fallacy of conjectural and inferential practice, pure in itself, the 'worthy product of heaven and certain source of fame.' The irreverent layman would seem here to see the distinct orerunner of western theories.

CHARAKA.

"Very much the same considerations are to be drawn from the study of Charaka ; who precisely he was and exactly when he lived we do not know. His 'code,' if we may for convenience call it so, is arranged in the form of dialogues between the master and pupil. The first book, divided into thirty heads, deals with the origin of medicine and the duty of the physician, and here we can trace some sort of analogy to the oath of Hippocrates. The arrangements, properties and uses of medicine are each discussed and the cause, nature and prevention and cure of diseases. Diet, steam-baths, the broad classification of foods—these are only a few of the subjects treated in this first book.

"The second book goes on to describe diseases such as fevers, tumours, leprosy, mania and epilepsy. The third book considers the nature of epidemics, the peculiarity of the fluids of the body and other subjects. The fourth treats of conception, the variety of the species, the parts of the body and the connection between body and soul. The fifth book is a description of the organs of the senses, their peculiarities and ailments, affections of the speech, causes of diseases of organs, sudden losses of strength and death. The sixth book treats of the means of securing increased vigour and enjoying long life, and different classes of ailments are dealt with, as dropsy, jaundice, asthma, erysipelas, thirst and poisoning ; inflammations, the effects of intoxication, abscesses, rheumatism and paralysis, too, all find a place in this book. The next, the seventh, treats of emetics and purgatives, and in its twelve chapters we see a remarkable number of such materials as were known to the ancient Hindus. The last and eighth book, also in twelve chapters, deals with evacuating medicines for fevers, injections for various purposes, clysters and so forth.

INSTRUMENTAL SURGERY.

"From these two, Sushruta and Charaka, sprang many schools and sages. Dr. Wise of the Bengal Medical Service, writing in 1845, mentions two systems of Hindu surgery, nine systems of medicine, three of materia medica, one of nocology, one on pharmacy, three on metallic preparation. Of this formidable number at least four have left no recoverable trace, but from the others we can gather the strength of the scientific knowledge of early India.

"The instrumental part of surgical treatment, they said, was divided into eight branches, to wit, cutting or incising, division or excision, drawing lines which corresponded to what we call sacrification and inoculation, puncturing, probing and sounding, the extraction of solids, the extraction of fluids and venesection and lastly suturing.

"For these diverse purposes the surgical instruments were divided into two classes, the *yantras* or blunt instruments, and *sastras* or sharp instruments. The *yantras* which constitute the greater portion of the surgeon's outfit consisted of instruments such as forceps, speculs, syringes, cupping appliances, probes, spoons, cauteries, etc. The *sastras* consisted of knives of diverse sorts for various purposes, needles, scissors and sharp probes. With these *yantras* and *sastras* went such appliances as thread, leaves, bandgets, pledgets, and a variety of astringents and emollient applications; and these *yantras* and *sastras* were divided into no less than 125 separate classes."

HINDU ANATOMY.

Proceeding, Capt. Johnston-Saint said: "The early Hindu surgeons must have possessed a very considerable knowledge of anatomy, but we find ourselves faced with some difficulty in reconciling this deduction with the horror of modern India at even the touch of a corpse. When in 1836, English surgery was first introduced into India only ten students could be found in the whole of the peninsula even to consider the prospect of dissection, and then on dry bones and on the skeletons of goats; the human body was taboo and it was not till one student—his name deserves to be remembered, Modhusudan Gupta—managed to lead the way by conquering his prejudices that any progress at all was possible. Even then the first dissecting room was specially built with high walls and was permanently under a strong police guard, so high ran local feeling Children were said to be kidnapped, the sick to be murdered for the dissecting table; even in England of a century back we seem to have heard similar tales.

"The systems of anatomy fall roughly into three schools, those of Atreya, who is reputed to have lived about B. C. 1200, of Sushruta and of Vagbhata who flourished about the second century B C. A traditional recension of the statement of Charaka begins as follows:—"The body consists of the following parts:—the two

arms, the two legs, the head and neck and the trunk. These made up the sexipartite body ; inclusive of the teeth and nails it has 360 bones, which are then given in detail. It will be observed that Charaka looks upon the head and neck as being together but one main division. In Sushruta's table, on the other hand, we get a grand total of only 300 bones. He says : 'Surgical science knows only of 300 bones. Of these there are 106 in the extremities, 128 in the pelvic cavity, sides, back, shoulder and breast, and from the neck upwards 66. In this wise the total of the 300 bones is made up.' And then he proceeds to count them in elaborate detail.

THINGS RE-DISCOVERED BY WEST.

"But, however, these doctors may have differed as to their way of reckoning, there is no room for possible doubt that their system gave them a very thorough knowledge of anatomy, as indeed must have been necessary for the performance of the operations which we know were freely undertaken, some, of them of the utmost delicacy. For not only were limbs amputated, but abdominal sections were performed, fractures were set, ruptures were reduced and foreign substances were dexterously extracted.

"To Sushruta is due the glory of the discovery of cataract-couching, centuries before it was known to the West, while the plastic surgery of skin grafting and rhinoplasty, only comparatively lately rediscovered in Europe, were frequently practised by the same great Hindu.

"His rules lay down exact regulations for the operating room ; it was to be fumigated with such and such disinfectant vapours, a light refreshment was to be offered to the patient before certain operations, while before other operations he was to do fasting. The surgeon should keep his hair and beard short, his nails clean and close cut—a doctrine which has been re-discovered by our modern bacteriologists—and wear a clean sweet-smelling dress. Even anaesthetics in some form or other were known, and at some later period we see in the Bhojaprabandha, a treatise written about 989 A. D., a reference to an inhalation before operation of an anaesthetic called *sammohin* recorded to have been used in the time of Buddha.

DECLINE OF HINDU SURGERY.

"Owing, however, to various causes this golden age of Indian surgery was destined, like other golden ages, to fade away into

silver and even baser metals. The ceremonial prejudice against the touching of a corpse rapidly increased, and before long it was impossible for the student to learn his anatomy from practical first-hand dissection. Bodies had to be laid out in water there to be rotted away till at last the skeleton was exposed. In this way only was it lawful to get at the bones. Dissection had to be made on goats, on anything rather than the human body. Anatomy then was being lost as a first-hand knowledge. The surgeon under the Hinduism of what we might call the Indian Middle Ages was becoming a person unclean. In the Manu-samhita, the author forbids his readers to eat cooked rice from the hands of a doctor, by which he means a surgeon.

"Again, with no actual general anaesthetic (for it is probable that the inhalation I have just mentioned referred rather to some sort of doping into comparative insensibility) the patient was naturally averse to an operation if it could possibly be avoided, and so we begin to find various substitutes for the knife. Incisions were made by caustics and all sorts of cauteries and poultices were in use to avoid actual cutting ; and as they avoided surgery so also they shrank from post-mortem examination and thus lost the last opportunity of testing diagnosis. The tide had begun to turn."

Taking a general review of Hindu surgery and medicine as it was at its best, Captain Johnston-Saint said : "We find that gravitation was known to the Hindus long before the birth of Newton and that the system of the circulation of the blood was discovered by them centuries before Harvey was heard of. The atomic theory again was preached in India centuries before the birth of Christ, and their knowledge and comprehension of the science of mathematics and astronomy were remarkable. With amputation came artificial limbs and in the *Rig Veda* we have such a reference. An artificial leg, we learn, was made of iron ; there were too artificial eyes. According to Dr. Hirschberg of Berlin :—"The old plastic surgery in Europe had taken its new flight when these cunning devices of Indian workmen became known to us." The transplanting of sensible skin-flaps is also an entirely Indian method.

"In particular the Hindu surgeons were adepts at the forming of new ears and noses from the grafting of flaps of skin. The cause of much of their practice is an oddity that we might notice

in passing—the cutting off of nose or ears being a common punishment for the criminal and for the unfaithful wife. The Harley Street of ancient Hindu surgery seems then to have enjoyed a certain amount of what one might perhaps call divorce court practice !

"From the *Mahavagga* we may learn that Jivaka, the physician of Buddha, practised cranial surgery with success, and long before the birth of Jenner the cow-herds of India were practising a kind of inoculation or vaccination for small-pox. Collecting the dry scabs of the pustules, they placed a little of these upon their fore-arm, then puncturing the skin with a needle, so securing a certain immunity. According to at least one scholar, a Dr. Huillet of Pondicherry, actual vaccination itself was known to the Hindu surgeons. So much then on the side of surgery.

Diseases and Treatment.

"The Hindu physicians were the first to devote their attention to the study of diseases and their treatment, and in medicine their learning in many cases far antedated our own, as was only natural from the immense study given to the properties of every product of the soil. The smoking of *datura*, for example, in cases of asthma we owe entireiy to India, as also the prescription of Nux Vomica in paralysis and dyspepsia, and very largely the use of croton. Even the effects of excessive smoking came under the notice of the Indian physician.

"In toxicology they had extraordinary skill and in the story of invasion of India by Alexander, while all the Greek physicians were powerless in cases of snake-bite, the Indian doctors readily cured those who fell under this affliction. For this reason Nearchus says :—'Alexander collected round himself the most prominent of the Hindu doctors and proclaimed that any soldier bitten by a serpent was instantly to repair to the royal pavilion for treatment.' Their number of antidotes for different classes of cases was extraordinary, as might be expected from a science one of whose masters, Charaka, described in his teaching no less than 600 separate purgatives.

Midwifery.

"In the field of what to-day we should call psycho-therapy the Hindus again held pride of place, and centuries before Freud was heard of, the Hindu doctors were anxiously probing into the secrets of dreams. With much that we were taught to regard

till quite recently as absurd, their teachings show signs of a good deal of our newest learning, and in, for example, the theories of the error dream they came at least remarkably near our twentieth century doctrine of the sub-conscious mind.

"Again, in midwifery the Hindu was well in advance, and his early writings display a remarkable knowledge of the technique of this branch of medical science, including Cæsarian section, and what we should now call pre-natal treatment. The expectant mother, it was taught, was to be kept in a happy frame of mind, her surroundings were to be placid and pleasant, and in effect the instructions that the mother-craft clinics of London are giving to-day and have been giving for a matter of possibly for last ten years or so, were being taught, as a matter, of course, in the ancient India of centuries upon centuries back.

"Medical hygiene occupied an enormous proportion of early Hindu practice, and the science of climatology, at once so old and yesterday so young, was widely practised and understood. There were three distinct sorts of country, *Anups*, the moist and marshy districts where 'phlegmatic' diseases and 'affections of the wind' would be prevalent; *Jangala*, the over-dry country where ailments of the 'bile and blood' would be common; and *Mishra*, neither too moist nor too dry, too warm nor too cold. Patients suffering from various ailments would be directed to try a different country, perhaps from Anupa to Jangala or *vice versa*, and *Mishra* would be recommended generally for the period of convalescence.

TWIGS AS TOOTH-BRUSHES.

"The codes laid down precise recommendations for the habits of patients of different types, the foods to be eaten, the clothes to be worn, even the hours for sleeping and for getting up. There was no province of human life, however intimate, for which recommendations were not to be found in the ancient Hindu medical code. What we know to-day as preventive medicine had its origins in India many centuries back.

"The ritual cleanliness of the Hindu is well-known, but long before the days when Brahmanism ruled every action of its votaries through the claims of caste and creed, we may find the elements of the code in early Indian medicine. Take, for instance, so primary a case as the use of the tooth-brush (now taught in English council schools as quite a late example of

twentieth century western hygiene). We find quite an elaborate set of regulations on the subject. A twig of bavala, the *acacia arabica*, was sufficient for general use, but for particular cases twigs of other woods were recommended; the Indian fig tree, *ficus religiosa*, for one case, the *pongammia alabra* for another, the *nagelea cadumba* for a third : in all no less than twelve distinct types of trees are singled out to provide tooth-brushes for particular types of users and there is a similar thoroughness about the regulations for the tooth-powder. We here in England having delayed the matter altogether for about twenty centuries have comparatively recently arrived at the point of oral hygiene and the use of the tooth-brush !

HINDU SURGICAL INSTRUMENTS.

"And if their preventive medicine, their midwiferry and toxicology were thus thorough we may be certain that at least equal pains were taken with the instruments of the Hindu Fathers of Surgery. I have already casually mentioned the remarkable number of the classes of instruments, but the subject deserves far more than any such cursory glance.

"There are the *yantras* and *sastras*, the blunt instruments and the sharp. Of the blunt, twenty-four kinds were cruciform, two kinds pincher-like, two pick-locklike, twenty tubular, twenty-eight rod or pricker like, twenty-five accessory, and there is the same sort of variety of the sharp instruments. In general they were made of iron and their jaws as a rule were fashioned to resemble the faces of birds and beasts. So there were forceps with jaws shaped to resemble that of a tiger, the wolf forceps, the bear forceps, the butcher bird forceps, the crocodile forceps, the heron forceps and many others similar.

EUROPEAN DEBT.

"One remarkable point, however, I might mention is that precisely on the pattern of *singhamukha svastika*, or lion-faced forceps, described by Sushruta, are the forceps now used by modern European surgeons for holding bones firmly during operations ; the surgeon names his instrument 'lion forceps.' Although, of course, no original specimens of these instruments have survived, a very comprehensive set of exact replicas are to be seen at the Wellcome Historical Medical Museum. On examining these instruments, they will be seen to be remarkably similar to those in a catalogue of a modern surgical instrument-

maker. More remarkable still perhaps is the fact that in many cases we can trace their exact geneological descent down to our own day, for we have descriptions of many of the instruments of the ancient Greeks, Romans and Arabs, and in case after case they tally exactly with those shown here as ancient Hindu. More, with the destruction of Pompei, many instruments were buried under volcanic ash and, being centuries later disinterred, are now to be seen preserved in the Naples Museum. These too tally in exactly every detail with many of our descriptions of the instruments of the Hindu surgeons as given in the old Sanskrit manuscripts.

"Exact instructions are laid down for the building of a dispensary, even for the cases in which instruments are to be kept. Dentistry is described and students were advised to practise extraction on certain fruit seeds and on the teeth of dead animals. At some period unknown, but certainly before the twelveth century A.D., false teeth were known to the Hindus.

HINDU MATERIA MEDICA.

"If then, this is what we find in surgery, what may we not expect in medicine from India, that vast and fertile country which, by the very nature of its size and climate, is indeed a veritable encyclopædia of the vegetable world? Nor shall we be disappointed. The materia medica of the ancient Hindus is a marvel to the modern scientific investigator; and that it was freely borrowed from by both Greeks and Romans cannot be denied.

"In the materia medica are described drugs belonging to the animal, vegetable and mineral kingdoms, the theory being that every substance had to be judged by its five properties, *Rasa*, *Guna*, *Veerya*, *Vipaka* and *Prabhava*. The first of these stood for taste, sweet, sour, salt, bitter, pungent or astringent, the sweet being more restorative than the sour, the sour than the salt, and so on. The second property, *Guna*, as virtue, the inherent power of the dru to cause a certain effect when taken internally or externally; under this heading Charaka gives fifty groups of ten herbs each, which, he says are 'enough for the purpose of an ordinary physician.' Agnivesha, on the other hand, gives no less than 500 classes alone of medicinal agents. *Veerya* stands for the power of a drug, being either heating or cooling. *Vipaka* was the consequence of action or

change which the drug underwent in the human organism ; and, finally *Prabhava* was its adherent nature or active force.

CLASSIFICATION OF DRUGS.

In the *Kalpasthanam*, we notice the classification of drugs and medicinal plants under their headings, tuberous and bulbous roots, bark of roots, bark of trees, trees possessing a peculiar smell, leaves, flowers, fruits, seeds, acrid and astringent vegetables, milky plants, gums and rasins. The list is interesting as it is in this book that we probably find our earliest notices respecting Botanical Geography, the sites and climates of different plants, the soils and seasons for collecting medicinal plants, the time that they remain good, how they are to be kept and the weights and measures of pharmacy. This Botanical gardening, coupled with the Indian pharmaceutical gardens, seems to possess a particular interest in medical history, and, again, it is to India that we owe it.

"Many of these medicines can be traced directly not only down to the Arabs but also to the Greeks and Romans. Dioscorides in his first book mentions many Indian plants, particularly among aromatics, for which India has always been famed. Galen and Pliny also borrowed much, but it is the work of Dioscorides that is best calculated to show to how great an extent the ancients were indebted to India and the East for their medicines. There were some who used to think that the Hindus had their knowledge from the physicians who accompanied Alexander the Great on his conquests in the East, but we now know that it was to India that the Greeks, and so indirectly ourselves, owe most of their medicines. And while many drugs that had their origin in India have found their way into our own British Pharmacopœa, there were probably hundreds more Indian medicines still unacknowledged.

UNDER BUDDHISM.

"In the scheme of life of the Buddhist priest of 200 B. C. was included the assistance of the sick and blind, the deformed ; there were hospitals for pregnant women, hospitals for travellers. Buddha Das, we are told, established the system of State physicians, one being appointed for every ten villages on the great roads of India.

"Arboriculture and irrigation were carried out under State supervision. In the line of preventive medicine, laws were passed regulating burial and sanitation, many modern regulations in

the latter direction being antedated by centuries in the codes of the Buddhist kings. The royal households set an example to their subjects in the direction of their houses and gardens. Medicinal herbs were grown in pots and certain plants were grown that had the property of warding off snakes ; cats, peacocks and other creatures were kept in compounds for the same purpose, and parrots were encouraged on the grounds in that their shriek was a warning of the presence of snakes. And anti-adulteration laws were drawn upon lines of strictest severity, and even carelessness on the part of a doctor was vigorously dealt with.

ANIMAL SANCTUARIES.

"Under Buddhism, veterinary science reached an enormously high level and infinite pains were taken for the care and treatment of the animal creation. Horses, elephants, cows, fishes, game-birds, almost everything, had its veterinary surgeon ; the game-keeper, the superintendent of forests, the superintendent of horses, each became a high officer of the Buddhist State.

"Under the government of Chandra Gupta (C. 316 B. C.), our modern system of bird and animal sanctuaries was forestalled and whole tracts were devoted to the preservation of birds, fishes, deer and other animals that did not apparently prey on life. Life within the Buddhist reserves was literally and absolutely sacrosanct. Regulation after regulation was laid down dealing with the minutest details of the proper rations to be given to different animals at different ages, in sickness and in health, and over their ailments was lavished a care which centuries later a European peasant might well have envied. All over India, at the height of the Buddhist wave, set up animal-hospitals managed for the most part by the State's own veterinary doctors. It was the apotheosis of the animal world. Centuries later we can still find traces of these animal-hospitals in various parts of India, and particularly amongst the Jains. This, then, was the state of medicine in India at one of its most glorious epochs."

SPREAD OF INDIAN MEDICINE.

Dealing with the marvellous spread of Indian medicine throughout the whole of the then known world, Capt. Johnston-Saint said : "As long as the time of the thirty-seventh chapter of Genesis we find mention of the Ishraelite or Midianite merchants trading with their caravans of spices of India and balm and myrrh of Hadrmaut. Their traffic had its regular course towards

Egypt and in this trade-route of the remotest antiquity we arrive at some connection between India and the West. The Phoenecians, we know, had in the Persian Gulf their forts for the Indian trade, while as early again as 1686 B. C. the Arabs, we are told, had opened out a trade-route to India. Further, from the recent discoveries which have been made during the excavations carried out on the north-west of India, we have ample evidence that as long ago as 3000 B.C. there was considerable intercourse, both in trade and culture, between the peoples dwelling in this region and those of Babylonia and Egypt. In the East itself the Indian learning was carried to Ceylon, to Java, and later on to China and Tibet.

"Buddhism came and the Brahmin priest fled to the furthest parts of the known world. The Buddhist dynasties sank, Brahminism was recreated and Buddhist scholars, like those Greeks who with the fall of Constantinople brought the Renaissance to western Europe, fled with their learning to China, to Tibet, to everywhere. There are even those who say that Ancient Mexico owes much of her pre-Conquadistor civilization to the arts of India, and the discoveries made by Dr. Thomas Gaun in his recent expeditions to Central America disclose in a startling manner the striking similarity of the design and architecture of some of the Maya temples to those of ancient India.

GREECE ONLY A NURSE.

"Hippocrates, the Father of Medicine we know to have visited India. For what ? save for the fame of the Indian physicians. And in Greek medicine, in Arabian medicine, in what we know of Egyptian medicine, we find time after time traces of what can only have been derived from the even more ancient and famous Indian medicine. If we were to speak the truth we must call Greece not the parent of our modern medicine but its nurse. To Greece must be given the glory of nurturing and caring for the infant science, but its actual birth-place was in another country and continent."

After touching briefly on the fall of Indian medicine, Capt. Johnston-Saint concluded: "A system which has so survived through the centuries cannot be lightly condemned as being unscientific, and a school of thought is at present engaged in trying to bring about a sort of renaissance of the Ayurvedic system of medicine. In Madras, Calcutta, Benares, Bombay and other cities there have been established training centres for this purpose where the works of Sushruta, Charaka and other medical classics are systematically studied, so that we may have every ground for hope that before long the true Indian medicine may once again hold its place in its own India, the birth-place of the medicine of the world."

Original Articles

FEVERS IN AYURVEDA

BY

ASHUTOSH ROY, L.M.S. (Hazaribagh).

(*Continued from our last issue*).

SYMPTOMS—

(i) *In Batolyan*—(Excess of Vayu derangement)

Pain in bones, joints and head
Excessive body heat, giddiness
Thirst, dryness of mouth and throat
Swooning and delirium
Shivering
Pain in the side, Cough and respiratory trouble
Yawning
Bitter taste in mouth.

(ii) *In Pittolyan*—(Excess of Pitta derangement)

Diarrhoea
Giddiness and Swooning
Rash
Excessive Burning
Urine, fæces and sweat of reddish colour
Thirst
Perspiration
Loss of muscular power.

(iii) *In Kapholyan*—(Excess of Kapha derangement)

Lassitude and heaviness of body
Words uttered with difficulty
Excessive sleep
Sweet taste in mouth
Anonrexia, Nausea, Vomiting
Giddiness, Dimness of vision
Cough.

(c) In which two Doshas are equally affected but more than the third—

(i) Bata-Pittolyan—3 sub-groups :

$B^3P^3C^2$, $B^2P^2C^1$, $B^3P^3C^1$

(Excess of Vayu Pitta derangement).

(ii) Bata-Kapholyan—3 sub-groups :

$B^3C^3P^2$, $B^3C^3P^1$, $B^2C^2P^1$

(Excess of Vayu-Kapha derangement).

(iii) Kapha-Pittolyan—3 sub-groups :

$C^3P^3B^2$, $C^3P^3B^1$, $C^2P^2B^1$

(Excess of Kapha-Pitta derangement).

SYMPTOMS (Rupa)

(i) *In Bata-Pittolyan or Bahhru* :

Giddiness
Burning and Thirst, Dryness of mouth
Heaviness of body and Lassitude
Severe pain in head, Delirium
Eyes half-shut
Tympanites
Anorexia
Sleepiness
Cough and Respiratory trouble.

(ii) *In Bata-Kapholyan* or Sighrakari :—

Chilliness alternating with Heat
Giddiness and Swooning
Sneezing and Coryza, Pain in the side and Cough, Respiratory difficulty
Thirst
Anorexia
Griping in stomach
Absence of perspiration
Sleepiness
Pain over cardiac region.

(iii) *In Pitta-Kapholyan* or Bhallu :—

Burning inside and chill outside
Excessive thirst
Pain in chest (side and over heart), head, and throat, on bones
Mucus and blood comes after prolonged coughing, and Respiratory trouble

Rash
Diarrhœa
Hiccough
Eyes partially shut
Vomiting
Giddiness.

(*d*) In which three doshas are unequally affected :

(1) Sanmoha—$B^3P^2C^1$
(2) Pakal—$B^2P^3C^1$
(3) Krukach—$B^3P^1C^2$
(4) Jagma—$B^1P^3C^2$
(5) Karkatak—$B^2P^1C^3$
(6) Baidarik—$B^1P^2C^3$

SYMPTOMS CHARACTERISTIC IN—

(1) Sanmoha—Catarrh, ulcer in mouth, excessive pain in the sides.
(2) Pakal—Diarrhœa, anorexia, thirst, burning and giddiness.
(3) Krukach—Headache, shivering, Respiratory difficulty, anorexia, vomiting, delirium.
(4) Jagma—(Jaundice)—Eyes and urine yellow, burning, anorexia, thirst, giddiness.
(5) Karkatak—Chilliness and heaviness of body, sleepiness, pain in bone and joints, delirium.
(6) Baidarik—Anorexia, vomiting, catarrh, lassitude, sleepiness.

(*e*) In the following groups of Sannipat, the Doshas are not only unequally but irregularly affected. The clinical picture is very varied. These are very complicated and of grave prognosis.

(1) *Sitanga Sannipat* :
(2) Tantrik
(3) Prolapak
(4) Raktastibi
(5) Bhugnanetra
(6) Abhinyash
(7) Jivak
(8) Sandhiga
(9) Antaka
(10) Rugdaha
(11) Chittyabhram

(12) Karnika

(13) Kanthakubja

Sitanga sannipat—Catarrh, hiccough, shivering, fatigue, loss of muscular power, giddiness delirium, collapse, burning inside the body, vomiting, hoarseness, pain over body. (Incurable).

Tantrik—Excessive sleep and thirst, diarrhœa, cough and severe respiratory difficulty, pain over body, temperature very high, ulcer inside throat, coldness of tip of nose, black tongue, fatigue (sense of weakness), sensation of burning of the body, hearing affected. (Cured with difficulty).

Prolapak—Delirium, shivering, pain, burning sensation, unconsciousness or coma (Incurable).

Raktastibi—Haematemesis, blackish red erythematous patches of skin, eyes congested, thirst, anorexia, vomiting, respiratory difficulty, diarrhoea, giddiness, tympanities, hiccough excessive pain over body, coma. (Incurable).

Bhugna-netra—Eyes diverging widely, cough and respiratory difficulty, sleepiness, giddiness, burning in the head and shivering, delirium (Incurable).

Abhinyash—Severe coma, want of exertion, lies as if dead, loss of organic function, severe respiratory difficulty, very feeble voice, severe burning, loss of muscular power, faulty digestion, loss of action of special sense, head moves to and fro, groaning, restlessness, refuses to take food, pain of pin-pricking over the body, speaks or answers rarely. (Incurable).

Jivak—Tongue like strawberry, loss of speech, hearing and strength (asthenia), cough and respiratory difficulty, excessive body heat. (Cured with difficulty).

Sandhiga—Pain and swelling of joints, mouth full of mucus, loss of sleep, cough. (Cured with difficnlty).

Antaka—Head moves to and fro, cough, unbearable pain over the body, hiccough, respiratory difficulty, burning, giddiness, excessive heat, disturbance of mind, delirium. (Incurable).

Rugdaha—Severe heat and thirst, respiratory difficulty, delirium, giddiness, loss of appetite, unconsciousness, pain in the back of neck and throat. (Cured with difficulty).

Chittyabhrama—Violent delirium (sings, cries or laughs at times), disturbed vision, swelling, pain and burning in the body,

patient has the hallucination that he will be tortured. (Cured with difficulty).

Karniek—Parotites, difficulty of deglutition, loss of hearing, respiratory difficulty, delirium, perspiration, burning, coma. (Cured with difficulty).

Kantha-Kubjya—Pharyngites, respiratory difficulty, delirium, anorexia, burning and pain all over the body, thirst, pain over jaw, headache, shivering, coma. (Cured with difficulty).

The following are the names of prominent groups of Symptoms in Sannipat which are incurable.

Kumbha-pak—Epistaxis (discharge of mucus and blood from nose), head is moved to and fro.

Promenaba—Limbs are thrown upward constantly and there is respiratory difficulty.

Antardaha—Burning inside and chilliness outside, very high temperature, oedema and respiratory difficulty.

Dandapat—Loss of sleep, of sense ; hands are spread out to catch imaginary objects—rises up suddenly.

Anidaha—Creeping sensation over skin with shivering and burning.

Haridraka—Yellow skin, eyes and fæces, burning inside and chilliness outside.

Ajaghosa—Quits smell like that of a goat, pain in the shoulder, difficulty of deglutition, eyes are coppery red.

Bhutahasa—Organs of special sense deranged.
Voice—of anger, or laughter.

Jantra-pirah—Pain as if body is being beaten with a blunt weapon, vomit of yellow colour mixed with blood.

Sannyas—Diarrhœa, vomiting, utterance of queer sounds, shivering, delirium, eye balls roll upward.

Sanshosti—Skin and eye blackish red with white patches on skin.

These, in modern medicine, are some of the symptom-complexes of Typhoid states.

AGANTUKA FEVERS

Surgical and Septic fevers and fevers due to various poisons, etc.

These are also varieties of Sannipat fever, because the three Doshas are deranged and cause the fever. But here the derangement of Doshas are not primary but secondary due to a variety

of causes. The classification of these fevers therefore depend on their etiology and fever is a complication.

These fevers are broadly divided into two groups, as follows :—

(*a*) Abhighataja—Fever due to accident, ulcer or injury. Symptoms are swelling, pain, change of colour of the part affected.

(*b*) Abhi-sangaja, divided into—

(i) Due to pertaking of various vegetable or mineral poisons. Symptoms are diarrhœa, want of appetite, thirst, pain of pins and needles, black face, coma, etc.

(ii) Due to smell of certain volatile poisons. Symptoms—headache, vomiting, shivering, sneezing, swooning.

(iii) Due to excessive excitement of emotions :—
Anger—fever with shivering
Fear,
Sorrow with delirium.

(iv) Due to mental unstability—unnecessary laughing or crying.

Clinical Stages of Fever with Symptoms

Shyam fever

First stage (i) "*Tarun*" or Am-apakya stage (acute). The chyle is deranged and mixed with the toxins from the intestines (enters the blood affecting it) and fever results.

Symptoms—Dribbling from the mouth, nausea, anorexia, palpitation, sleepiness, lassitude, indigestion, bad taste in mouth, heaviness of body, excessive urine, faeces full of mucus, not solid and having fœtid odour, etc. These vary with the Doshas deranged.

(ii) *Am-pachyaman*—The derangement of chyle is in the course of being removed.

Symptoms—Excessive heat and thirst, delirium, respiratory trouble, giddiness, vomiting, desire for motion, etc., according to the Dosh or Doshas deranged.

(iii) *Am-pakya*—The derangement of chyle has been removed.

Symptoms—Diminition of fever, all secretions and excretions of the body are freed, so that wind, bile, phlegm, urine and fœces are freely passed.

Niram fever

These three stages jointly constitute the Shyam stage of fever. When this stage is over, fever passes into the second or Niram

stage. No more toxins are absorbed into the blood, which thus gets time and opportunity to be purified.

Symptoms—Return of appetite, weakness, lightness of body, fever subsides gradually, secretions and excretions are freely passed.

Disappearance of fever with crisis

Some fevers suddenly subside with crisis.

Symptoms (i) *Before crisis*—Burning, giddiness, thirst, shivering, groaning, bad smell from mouth, passing of stool, loss of consciousness. Nature is making a violent effort to get rid of toxins from the system by stimulation of anti body formation.

(ii) *After crisis*—Perspiration, freeing of secretions and excretions, lightness of body, return of appetite, herpes on the lips, etc.

The fight is over and nature or vitality has overcome the disease. The toxic bodies are neutralised by formation of sufficient antibodies and removed by the various excretions after they are made harmless.

Symptoms of Deranged Doshas (Shyam stage)
and *when corrected* (Niram stage)

(*i*) *Vayu :*

Shyam Vayu is evidenced from the following symptoms :—

Indigestion and sleepiness, rumbling in the bowels, colicky pains aggravated in the first-third part of day or night.

Niram Vayu—When the derangement of Vayu as a result of toxæmia has been removed.

Symp.—motions are not slimy but rather dry, absence of smell, absence of griping, etc.

(*ii*) *Pitta :*

Shyam Pitta—The deranged bile loaded with toxins affect the Pitta. Bile is more acid, foul smelling, comes out as vomit. There are eructations, pain and burning inside throat and heart-burn. (Increased acid in the system. The PH is turned towards the acid side).

Niram Pitta—Motion is passed, appetite returns, patient feels lighter.

(iii) Kapha :

Shyam Kapha—Lassitude, sleepiness, irregular action of heart, excess of thirst, anorexia, nausea, heaviness of body.

Niram Kapha—Lightness of body, brain clear, heart regular in action, appetite returns, anorexia and nausea disappear.

Dhatu-pak—Lowered vitality of tissues as a result of toxæmia of fever.

Symptoms—Loss of sleep, irregularity of heart's action, tympanites, anorexia, heaviness of body, uneasiness, etc.

Mala-pak—Removal of toxins from the blood and tissues.

Symp.—Free action of secretory and excretory organs, body gets lighter, fever diminishes, patient feels better.

Complications of fever

(1) Cough and respiratory trouble
(2) Hiccough
(3) Anorexia
(4) Thirst
(5) Vomiting
(6) Diarrhœa or constipation
(7) Pain all over the body
(8) Delirium and coma.

Prognosis of Fever

Prognosis is favourable if

(*a*) Fever is *bahirbeg*—Toxæmia is met with by increased high temperature

(*b*) Fever is *prakrita*—seasonal

Prognosis is less favourable if

(*a*) Fever is *antarbeg*—The patient is so much overwhelmed with toxæmia that they do not react with high fever and increased formation of antibodies.

(*b*) Fever is *bikrita*—Fever appearing not in its own season. Unseasonal.

(*c*) Chronic course—depending on nature of fever, the vitality is lowered and exhausted.

(*d*) When much complications are present.

(*e*) When important organs of sense are involved

(*f*) When important tissue systems (dhatus) are affected.

(*To be continued.*)

THE PULSE CONDITION IN VARIOUS DISEASES ACCORDING TO AYURVEDIC MEDICINE

BY

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(Continued from our March issue)

(49) Trishnaroga or Polydipsia

(1) तृष्णारोगे भवेन्नाडी जलौकादि गति सदा। II 38

(2) तृष्णारोगेतु चञ्चला। II 42

(3) तृष्णासु शुष्का जड विह्वलाङ्गी। II. 1 : ना. वि. त.

(1) The pulse always takes the progression of the leech, etc, in polydipsia.

(2) The pulse becomes frequent (or beats with celerity) in polydipsia.

(3) The pulse becomes dry, that is, small and is overwhelmed with dullness, that is, the pulse is so small that the individual beats cannot be distinguished from one another.

Here we are actually concerned with the diseases the prominent symptom of which is polydipsia. The thirst is one of the most distressing symptoms in Diabetes Mellitus, with the consuming of a large quantity of water and later on due to supervention of arterosclerosis the pulse remanis high tensioned (as indicated by its resemblance to the progression of leech). In Phosphatic Diabetes of a few years' standing with great ematiation, the pulse beats with celerity due to low arterial tension consequent upon dehydration of the tissues. Lastly, in chronic Dilatation of the stomach, the pulse becomes very small ; here the thirst is a prominent symptom.

(50) Dagdha or Burn.

दग्धे सर्पस्य यानं जलुवक्रवृत्तम्। II. 12

In burn the pulse resembles the progression of a snake and becomes curved and rounded like (the movement of) a leech. The condition of the pulse thus depicted evidently refers to a high-tension pulse, with a slow rise and fall and a rounded top. The state of the pulse refers to the second stage or the stage of reaction.

(51) Daha or paraesthesia of burning (formication).

दाहे गाडी भवेदुष्णा गम्भीरा द्रुतगामिनी। II. 37 ; ना वि त.

In the paraesthesia of burning, the pulse becomes jerky, deep-seated and quick. It perhaps refers to the congestion of liver, a very common disease, which gives rise to burning sensation of the whole body surface.

(52) Dhanustambha or Tetanus.

The disease is also known as Hanustambha and Hanugraha, both referring to lock-jaw characteristic of the condition. Probably the term Manyastambha which literally means stiff-neck refers to this disease.

(1) ऊर्द्धं गतायाति बलाद् अधश्चेन्नाडी धनुस्तम्भगदे गभीरा।

II. 4 ; II. 37 ; ना. वि. त.

(2) हनुस्तम्भे स्थिरा नाडी वेगवेगा स्थिरास्थिरा। II. 42

(3) मन्यास्तम्भे भवेन्नाडी शुद्धा निर्म्मलगामिनी। II 37

(4) मन्यास्तम्भे भवेन्नाडी शुद्धा गुर्व्वी घनोपमा। II 4 ; ना. वि. त.

(5) हनुग्रहे भवेन्नाडी शुद्धा च कठिनाप्लुता। II. 37 ; ना. वि त.

(1) The deep-seated up-going pulse forcibly goes down in *dhanustambha* (body rigidly fixed like a bow).

(2) In lock-jaw, the imperceptible pulse becomes forcible at one time and becomes imperceptible at another.

(3) In stiff-neck, the pulse becomes pure (that is, the individual beats are distinct and going without any impurity, that is, beats are not fused with one another).

(4) In stiff-neck, the pulse becomes pure, full and is comparable to a hard mass.

(5) In lock-jaw, the pulse is pure and is bathed with hardness.

In a geneaal way, the pulse conditions may be considered to be of two types: (1) It becomes forcible at one time and small and imperceptible at another. This variation is evidently due to the firm tonic contraction of the muscles of the fore-arm alternating with certain amount of relaxation at the intervals.

(2) The pulse is hard and with distinct beats. This pulse condition is observed in those cases of tetanus in which the spasm remains localized in the jaw and neck muscles.

(53) Nashta-garbha. This condition is one with a dead-fœtus inside the womb (Missed Abortion).

पित्तवहा लक्षो नष्टगर्भं वदेज्जतां ।

The pulse with Pitta-characteristics and with a high rise indicates missed abortion. This refers to a full, low-tension pulse (with a sharp rise) indicative of general toxaemia.

(54) Nadivrana. This condition corresponds to a sinus or fistula.

(1) नाडीव्रणे कुटिलिनी परिपिच्छिला च
विस्रब्धमन्थरगति र्ग्रहणाभिरामा ।
ऊर्ध्वं प्रयाति परिनिम्नगतापि नाडी
ज्ञेया बुधैः सकलदोषविमिश्रिता सा ॥ II. 4 ; II. 16 : ना. वि. त.

(2) भगन्दरानुरूपेण नाडीव्रणे निवेदने ।
प्रयाति वातिकं रूपं नाडीपावकरूपिणी ॥ II. 4 : II. 38

(1) In nadi-vrana, the pulse is curved, slippery (that is, with a flat top and wave passing easily beneath the examining fingers) with a calm and slow motion (that is, not jerky and frequent) and is graceful to the touch. If the down-going pulse also goes up (that is, with a sharp rise and fall), it is recognised by the learned as one mixed with all the derangements (that is, shows the derangements of *Vayu*, *Pitta* and *Kapha*).

(2) In Nadivrana, like fistula-in-ano, the pulse beats like one in *Vayu* and is fire-like (that is, the beats are forcible).

It appears from the above characters of the pulse that we are evidently dealing with two diseased conditions. First, we have a slow pulse with moderate tension. Secondly, we are dealing with a jerky, low-tensioned pulse. The first case evidently points to a chronic simple fistula ; whereas the second case probably refers to one supervening on tuberculous deposit and seams to be attended with fever.

(55) Namatola—We find the name of this disease in the work on pulse examination in Bengalee language (II. 9.). I could not make out the nature of the disease from the name.

কলিঙ্গ ভুজঙ্গের গতি করয়ে গমন ।
নামাতোলা বলি তার জানিবে লক্ষণ ॥

If the pulse beats like the progression of the *kalinga* (a kind of bird, popularly called *phinga*, which has its progression like that of a sparrow) and *bhujanga* (a kind of bird), it is to be considered as a sign of *Namatola*.

(56) Nasamaya.—It is a disease of the nose in general.

(1) नासामये मन्थरगामिनी स्यादा लोडिता मध्यमुपैति नाड़ी।

II. 4 ; ना. वि. त.

(2) नासारोगे सा क्षीणा धमनीमन्दाचञ्चला। II. 42

(1) In a disease of the nose the pulse becomes slow-going and gets moderately shaky (that is, with small excursions).

(2) In nasal disease, the pulse becomes weak (small), slow and beats with celerity.

It is very difficult to ascertain the nature of the disease of the nose with the above pulse conditions. Presumably it may be rhinitis of tuberculous or lupoid origin.

(57) Netraroga.—It is a disease of the eye in general.

नेत्रामये मन्थरनिष्ठुरा स्यात् सपिच्छिला क्रूरमुपैति नाड़ी।—ना. वि. त.

In a disease of the eye the pulse becomes slow and hard and gets slippery and curved.

It is not possible to determine the nature of the eye disease. It may be some form of ophthalmia.

(58) Pakshaghata or Hemiplegia.

(1) पक्षाघाते भवेन्नाडी शुद्धा च पवनप्लुता। II. 4

(2) पक्षाघाते भवेन्नाडी मन्दा शुष्क विलोलिता। II. 37 ; ना वि. त.

(1) In hemiplegia the pulse becomes pure and bathed in Vayu (that is, the pulse beats are distinct and the pulse is high-tensioned).

(2) In Hemiplegia the pulse becomes slow, dry (that is, slender) and shaky.

The first condition is undoubtedly associated with cerebral haemorrhage. Thus Thomas (Osler and McCrae's Modern Medicine Vol. V. p. 435) says :—"It is, as a rule, hard and full and the blood pressure may be very high." The second condition may be due to thrombosis, in which case the blood-pressure is usually low and the pulse feeble or irregular.

(59)—Pangu. This is a crippled condition due to contractures of the thigh muscles.

पङ्गौ निम्नगा नाड़ी स्यात् प्रायेन गतिरोधिनी। II 4 ; II. 37

पङ्गौतु निम्नगा नाडी स्यात् प्रयाने विरोधिनी। ना. वि. त.

The pulse becomes down-going (that is, completely recedes from the examining fingers) and becomes obstructed (hindered) in movement (in beating). This pulse condition is probably due to

the contractures of the muscles of the forearm pressing on the radial artery.

(60) Padasotha or Dropsy of the legs.

पदशोथे तथा स्थिरा। II 42

The pulse becomes nearly imperceptible in dropsy of the legs. The condition is undoubtedly one of general anasarca.

(61) Pandu.—The actual condition is not very clear. The lexicographers often call it jaundice. But the following extracts from a Tantra show that it is not jaunddice, but some other diseased condition.

मृदु नाडी यदा धैर्यमरक्तं वक्त्रनेत्रयोः।
तदा पाण्डुं विजानीयाज्ज्वलन्नेत्रकराङ्घ्रिकं॥

If the soft pulse becomes quick, the face and the two eyes become bloodless and there is burning of the eyes and hand and feet, then the condition should be taken as *Pandu*.

अतिमन्दगतिर्नाडी क्रूरा कञ्चुकगामिनी।
नेत्रवक्त्रं हरिद्वर्णं हरिद्दन्त नखानि च॥
हरिद्गात्रानि ज्ञेयानि कामलं रक्तहीनकं॥

If the pulse is very slow and curved and beats like the progression of a snake, if the eyes, face, teeth, nails and the surface of the body become yellow, then the disease is to be considered *Kamala*, which causes bloodlessness.

From these two passages it is evident that the *Kamala* is jaundice, whereas the *Pandu* is chronic congestion of the liver (primary).

(1) पाण्डौ तु केवलं नाडी कृशा भिन्ना प्रचारिणी। II. 4 : ना. वि. त.
(2) पाण्डौतु केवलं नाडी मुहुराप्यायते स्थिरा। II. 38
(3) पाण्डौतु केवलं तन्त्री दृष्टादृष्टा प्रचारिणी। II. 28
(4) पाण्डुरोगे चला तीव्रा दृष्टादृष्टा विहारिणी। II. 20
(5) विशीर्णा शीघ्रा सा भवति पाण्डौ तु धमनी।

II. 4 ; II. 37 ; ना. वि. त.

(6) क्रिमिरोगेऽपि क्षीणा स्यात् क्षुद्रा महीलतागति।
एव स्यात् पाण्डुरोगेच॥ II 42

(1) In Pandu only (that is, when uncomplicated) the pulse becomes slender (feeble) and divided (that is, the beats are distinct from one another).

(2) In Pandu only the pulse becomes repeatedly full and beats slowly.

(3) In pandu only the pulse becomes perceptible or imperceptible.

(4) In the disease of Pandu the pulse is forcible (that is, jerky and strikes the examining finger sharply) and beats (sometimes perceptibly and (sometimes) imperceptibly (that is, the pulse is sometimes well felt by the examining fingers or at other times, perhaps in another patient, nearly imperceptible).

(5) In Pandu the pulse becomes slender (small) and ferquent (quick).

(6) In Krimiroga (infection with worms—most probably ankylostomiasis) the pulse becomes slender and small and beats like the progression of on earthworm. Such is the case in Pandu also.

Finding that the pulse condition in Pandu has been dealt with in so many works, it is highly probable that the disease was very common in India. Even now we find cases of chronic congestion of liver with somewhat full, low-tensionded, quick pulse, pale yellowish conjunctiva and burning of the eyes, palms and soles. In advanced cases there is distinct anæmia with very feeble quick pulse ; very often there is a distinct difference in the morning and evening pulse.

(62) Padadaha or formication of the legs—This condition is symptomatic of peripheral neuritis often found as a complication in diabetes.

पाददाहे भवेन्नाडी मीषणा वेगवती द्रुता।

II. 4 ; II. 37 ; ना वि. त.

In Padadaha the pulse becomes jerky and quick and beats with celerity. This pulse condition seems to be due to severe burning pain.

(63) Panatyaya or Madatyaya (Alcoholism).

(1) विशीर्णा पानात्यये गाढपुरीष दोषा। II. 4 ; II. 37 ; ना. वि. त.

(2) मदात्यये च सूक्ष्मा स्यात् कठिना परितो जडा।

ना. वि. त. II. 4 ; II. 20 ; II. 28

(1) The pulse in Panatyaya is slender (small) and is attended with intense disorder of faeces (refering perhaps to obstinate consptipation).

(2) In madatyaya the pulse is small and hard and the pulse-beats fully run together. (The pulse is high-tensioned).

Thus Lambert (Osler and McCrae's Modern Medicine, Vol. II, p. 411) says, "The pulse is full, bounding and increased in frequency in the young and vigorous individuals and in the elderly or weak it often increases in frequency, but is soft and weak."

(64) Pittasula —This seems to be biliary colic

पित्तशूले प्रकामगति। II. 6

The pulse beats forcibly.

(65) Pradara—The term is applied to a condition with abnormal discharges from the vagina.

(1) प्रदरे चपला नाडी अन्तःशून्या च दुर्बला[1]।

क्षीणा स्यात् आमरोगे..... ॥ II. 42 ; ना. वि. त.

(2) स्थिरा त्रैष्मवती नाडी भवति प्रदरे तथा।

(3) बलयुता सृग्दरे साग्नितुल्या। ना. वि. त.

(1) In Pradara the pulse becomes quick, empty (compresible) and weak. In an acute case, it is slender.

(2) In Pradara the pulse is nearly imperceptible (that is, very small) and shows the characteristics of Kapha.

(3) In Asrigdara (bloody discharges from the womb—metrorrhagia), the pulse is forcible and flame-like (jerky).

The Pradara is a condition in which the essential sign is a discharge of white or yellow colour due to cervical endometritis. It is usually known as leucorrhœa. The asrigdara is a discharge of blood from the uterus due to a variety of causes.

The pulse conditions described for *Pradara* evidently represents a chronic condition of long standing with great lowering of general health. Such cases are often found even now.

The pulse conditions in Asrigdara point to moderate bleeding from the uterus (to be distinguished from a profuse haemorrhage).

(66) Prameha or Meha :—

(1) प्रमेहात् नाडिका क्षीणा अन्तःशून्या च चञ्चला। II. 42

(2) प्रमेहेतु च जडा सूक्ष्मा सुहराभ्यायते शिरा[2]।

II. 20 ; II. 28.

(3) प्रमेहेतु जडा सूक्ष्मा ग्रन्थिरूपा च जायते। II. 4 ; ना. वि. त.

(4) प्रमेहे ग्रन्थिरूपा सा प्रतप्ता त्वामदूषणे।

II. 36 ; II. 4 ; II. 38 ; ना. वि. त.

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[1] विशेषतः। [2] स्थिरा।

(5) प्रमेहे चोपदंशेच ग्रन्थिरूपा धरा स्मृता। II. 41.

(6) প্রমেহতে গ্রহণীরূপা সুতপ্তা হয়।
অত্যন্ত বাতের শুদ্ধ জানিবে নিশ্চয়॥ II. 9.

(7) नाडी प्रमेहे परिसर्पणोष्णा सपिच्छिला
विह्वलगामिनीयां नानानिभा सर्पति मन्दमन्दा
जलौकावद्वक्र समा कदाचित्॥ II. 4 ; ना. वि. त

(8) मेहेशेमि मलाजीर्णो शीघ्रं तु स्पन्दते धरा।

(9) सूक्ष्मगा सर्व नाडी च क्रूराच मन्दगामिनी।
प्रमेहं तां विजानीयाद्दुर्बला गुरुता सदा॥ ना. वि त।

(1) In Prameha, the pulse becomes very feeble, empty (very soft and compressible) and quick.

(2) In Prameha, the pulse has fused beats, is fine (very small) and at times forcible.

(3) In Prameha, the pulse has fused beats (that is, the beats are not separate from one another). becomes fine (very small) and has the form of knots.

(4) In Prameha the pulse is of the form of a knot ; in an acute exacerbation it becomes hot (that is, jerky).

(5) In Prameha and Upadamsa, the pulse is said to be knot-formed.

(6) In Prameha the pulse becomes knot-formed and hot (jerky). It should be surely known as a pure intense derangement of Vayu.

(7) In Prameha the pulse is hot (jerky) in beating, slippery (that is, with low rounded top) and shaky ; it beats in various ways, and rarely becomes slow and curved like the progression of a leech.

(8) In Meha, Hæmorrhoids and Malajirna the pulse beats with celerity.

(9) If the pulse (by the term *sarba* is perhaps meant all the three principles, namely Vayu, Pitta and Kapha) is fine-going (that is, very small), crooked (curved, slow-going, feeble and always full) the pulse should be considered as one of Prameha.

(*To be continued.*)

ALKALIES IN AYURVEDA

SODIUM CARBONATE IMPURA

BY

AMRITLAL D. TRIVEDI, L. C. P. S. (BOMB).

Jam Raval.

—:o:—

SYNONYMS IN VARIOUS VERNACULARS :

San.—Swarjika, Swarjakapakya, Sukhapakya, Suvarchika, etc.

Beng.—Swarjikakshara.

Guj—Sajikhar.

Source—It is imported from Punjab and can be easily obtained from the market.

Physical characters—Black shining crystals having white colour like salt over it. On breaking, various white and black spots are found at random.

Action—Stomachic, antacid and carminative.

Dose. 6 to 20 grs. or 3 to 10 raties.

AYURVEDIC PREPARATIONS :

(1) Flowers of swarjika (sodium Bicarbonate)—It is sold in the market on a large scale at a very low rate, and hence Vaidyas buy it from the market and do not prepare it themselves.

Dose—1 to 2 drs. or 30 to 60 raties.

(2) Swarjkadi Churna—

Swarjikakshara 1, Yavakshara 1, Five salts (Pancha Laban) 1.

Directions.—Powder and Mix. Rub all the ingredients with lemon juice or pomegranate juice in a mortar and let it become dry in the shade. Rub it well when it dries up and then bottle it up.

Dose—¼ tola or 45 grs.

(3) Ksharamrita or Vajrakshara—

Swarjikakshara 1, Potassium nitrite 1, Rock salt 1, Ammon chloride 1, Alam exiscated 1.

Directions—Powder and mix. Take a Cocoanut containing water in it. Make a hole in it. Fill the above powder in it and do kapadmati. Let it become dry. Expose it to heat in

kukutaputa. When the whole thing cools of its own accord, take out the cocoanut and break it. Collect kshara together with the burnt kernel of cocoanut. Rub it in a mortar so as to make it to a fine powder, and then bottle it up.

Dose—2 to 8 grs. or 1 to 4 ratics.

Anupan—Warm water or Ghrita (clerified butter).

Indications—To be administered before meals in indigestion, dyspepsia, colic, and tympanitis.

PHARMACOLOGY AND THERAPEUTICS :—

Externally—A lotion of sodium Bicarbonate (20 grs. to 1 oz.) is employed as a sedative to relieve itching in various skin diseases.

Internally : Gastro-intestinal tract—Swarjikakshara is a gastric sedative and relieves the irritation of the terminals of the vagus in the gastric mucosa and hence it is useful in dyspeptic cough.

It is antacid and sedative to the gastric mucous membrane and hence it is used in indigestion, acid dyspepsia, colic, and tympanitis. To neutrilize the acidity of the stomach, it should be prescribed before meals. For these complaints, any Ayurvedic preparation containing it is selected.

Kidneys—It is a mild diuretic and is an alkalizer of blood. Owing to this action Sodium Bicarbonate 3 p. c. solution is administered by the mouth to the extent of about 2 to 3 pints at its maximum to neutralize the acidity of urine and blood in Diabetic coma.

OUR GOLDEN JUBILEE NUMBER IN JANUARY, 1930.

We are glad to announce that we are going to celebrate our Golden Jubilee in January 1930. A special issue of the Indian Medical Record will be published on the occasion and life sketch of our contributors, past and present, with their photos will appear in same.

We invite the attention of our readers to this notice and request them to collaborate with us in the task before us.

The size of the issue is expected to be double that of an ordinary one and we expect to print a very decent number. Special features will be a history of the journal, life sketches of our contributors, up-to-date Medical History, articles of prominent medical men, etc., etc.

For Advertisement rates and further information, please write to :—

The Manager, INDIAN MEDICAL RECORD,

2, Horokumar Tagore Square, Calcutta.

CORRESPONDENCE

To The Editor

THE JOURNAL OF AYURVEDA, CALCUTTA.

Dear Sir,

Re—Beef-eating in Ancient India.

I must at the outset thank Mr. Shiva Sharma, Prof. of Medicine and Toxicology, Dayanand Ayurvedic College, Lahore, for his very laudable attempt, after full two and a half years of research, to disprove my statement. I must also emphatically state here that "I have no account to settle with him." I hope he will please take my writings on the above subject in the right spirit. We are both seeking to find out the truth. I must state that his ripe erudition is evident in every line of his last letter (vide Journal of Ayurveda, June 29), but I very much regret to state that at times he well-nigh contradicts himself and at others he argues in a curious way.

He quotes authorities to prove that "Aryavarta was the original home of the Aryans" and then states that the North-western part of Aryavarta, the Punjab of to-day (I believe, his own province, I may be wrong), and not the whole of "Aryavarta", was the original home of the Hindus. I leave it to residents of other provinces of Northern India, the rest of the "Aryvavarta," to settle the point with him.

Because I stated that the Aryans used to take beef in their central Asian home, Mr. Sarma came to the curious conclusion that "they did not therefore feed their invalids and children with milk or did not beget them at all", thereby implying that my statement falls to the ground. Europeans and Mahomedans take beef, yet how is it that they "feed thier children and invalids with milk and beget them" ?

Now turning to the immediate subject in question, he cannot deny, neither he did it

1. that "Go-medh" was performed in India in ancient times;
2. that Prishodhra "practised cow-sacrifice finding that other animals had been scarce ;"
3. that "beef was recommended in certain diseases and in general prostration." He quite rightly adds that this "did not perturb the orthodox relegion in any way" on medical grounds.

It "did not perturb the orthodox religion then, as now amongst the Hindus." "The spirit of abhorence for beef-eating" was not so strong among the Aryans then as amongst us, the Hindus of the present day, who are their discendants, however remote.

As regards cow-sacrifice and beef-eating in Ancient India, my opinion was not based, as he cleverly hinted, on "Western Scholars who think that the Hindus were a beef-eating Nation in the beginning of History", but on the writings of a great Eastern Scholar—the late Dr. Rajendra Lala Mitra,

In Dr. Mitra's book (Indo-Aryans published by Newman & Co. Dalhousie Square, Calcutta), an entire Chapter (Chapter VI, Vol. I) is devoted to the discussion of the subject. He had quoted chapter and verse from our Shastras to prove that "Aryans used to take beef after sacrifice." I would strongly recommend Mr. Sharma to go very carefully through the above Chapter.

As regards human sacrifice by the Ancient Aryans he will find enough evidence in support of it in Vol. II, Chapter X of the same book.

Even Mr. Sharma with his profound knowledge of the "Shastras" and his ripe scholarship will find it extremely difficult, if not impossible, to disprove the late Dr. Mitra.

Personally I would repeat, what I have already stated in my last in this connection, that I shall be extremely happy and extremely grateful to Mr. Sharma, if he can disprove my statement, wich is practically that of the late Dr. Mitra.

In conclusion I must again thank Mr. Sharma for his praiseworthy attempt in this direction.

Yours &c.,

Hazaribagh, *15-8-29.* A. T. Roy.

To the Editor,

JOURNAL OF AYURVEDA, CALCUTTA.

Dear Sir,

Please publish the following letter in The Journal of Ayurveda to elicit opinion on the subject and oblige.

Yours Sincerely,

Mudhole, *1-9-29* } A. Sham Rao, L. M. P. *Medical Officer*

The Sanskrit name of Hydrocotyle Asiatica is Manduka-parni and that of Herpestis Monniera is Bráhmi. Some writers have given an additional name of Bráhmi to Hydrocotyle Asiatica. The same name of Bráhmi to two different plants is misleading. For instance, the advertisements of Syrup Bráhmi Comp. of the Indian Chemical and Pharmaceutical Works, Meerut in the Indian Medical Journal (a copy of which is herewith enclosed for your perusal) state that their Syrup of Brahmi is chemically prepared with the active principle of the

original Brahmi folia of the Nighantus (Hydrocotyle Asiatica) grown on the banks of the Ganges and warns the people to beware of imitations which are prepared from Herpestis Monniera. The above Syrup is advertised as a cure for sharpening memory, Stammering, Hysteria, Epilepsy, Insanity and other mental derangements.

According to Ayurvedic System of Medicine, Vol III. of N. N. Sen, Brahmi (Herpestis Monniera) is the drug used in preparing the Sastric Medicine, Brahmi Ghrita, which is used in Insanity and Epilepsy, and Mandukaparni (Hydrocotyle Asiatica) is the drug used for Leprosy and Elephantiasis. Dr. D. P. Sanyal in his Vegetable Drugs of India has described Brahmi (Hydrocotyle Asiatica) and he has not given any medicinal use of the drug in Insanity and Epilepsy. It is only used for Leprosy and Elephantiasis. He has not described the other drug Brahmi (Herpestis Monniera) in his Materia Medica.

I hope the readers will kindly contribute an article on the therapeutics, physical characters, etc of the above two drugs stating precisely which of the two should be used in preparing Brahmi Ghrita or Syrup of Brahmi.

Reports of Societies, etc.

ANDHRA VAIDYA MANDALI.

The first meeting of the Andhra Vaidya Mandali took place at Bezwada, in the Ramamohan Ayurvedic College Buildings, on 28th July 1929, exactly at 2 P.M.

In the absence of Ayurvedacharya N. Madhavamenon, Esq., President for the year, Mr. Ayurveda-bhushana Nori Ramasastry was elected President.

More than fifty members and well-learned Vaidyas attended the meeting, and nearly fifty members sent their opinions by post.

The following resolutions were passed unanimously :—

1 This meeting resolved to postpone the consideration of holding the 'Bhishak' examinations through the Andhra Vaidya Mandali, since no definite information has yet been received from the All India Ayurveda Mahamandal.

2. The following Vaidyas have been elected as members of the All India Mahamandal on behalf of Andhra Vaidya Mandal.

(1) Sjt. Ayurvedacharya N. Madhavamenon, A. M. A. C.
(2) ,, Vaidya Vidwan Chitti Narayanamurty Garu.
(3) ,, Ayurveda Bhushana M. Venkatasastry, A. M. A. C.

(4) Sjt. Ayurveda bhushana Nori Ramasastry, A. K. A. C.
(5) ,, Bhishakratna Dr. A. Lakshmipathi, B. A, M. B. C. M.
(6) ,, Ayurveda Bhushana P. Narasimha Sastry Garu.
(7) ,, Dr. J. P. Sundaram.
(8) ,, Raja-Vaidya A. Vijaga Sarathy Acharyulu.
(9) ,, Ayurveda Visarada Vempati Koteeswara Sastry.
(10) ,, Bhishagwara Vetury Sankara Sastry.
(11) ,, Kaviraj P. Krishna Macharyulu Garu.
(12) ,, Vidwan K. Anantacharyulu Garu.
(13) ,, Akkaraju Gopala Krishnayya Garu.
(14) ,, Bhishagwara V. Subba Rao, A. M. A. C.

3. Resolved to form a sub-committee with the following members to concert measures and to induce the Andhra University Authorities to open an Ayurvedic section in the University.

(1) Dr. D. P. Sundaram.
(2) Ayurveda Bhushana N. Ramasastry.
(3) Vaidya Vidwan C. Narayanamurty.
(4) Kaviraj P. Krishnamacharyulu.
(5) Bhishagwara V. Subba Rao.

4. Since in the opinion of this meeting it is considered the amalgamation of the present Venkateswara Ayurvedic College and Ramamohan Ayurvedic College at Bezwada into one well equipped Ayurvedic College, will lead to fruitful results, this meeting requests the respective principals and managing members of the said Colleges to try their best to amalgamate the two collegs as early as possible.

Also the following members were constituted as sub committee to expedite the said amalgamation.

(1) Bhishagwara M. V Subba Rao.
(2) Raja Vaidya A. Vijayasarathy Acharyulu.
(3) Bhishagwara V. Subba Rao.
(4) Vaidya Vidwan C. Narayanamurty.
(5) Bhishagwara V. Sankarasastry.

5 Resolved to authorise the secretary of the Andhra Vaidya Mandal to appoint agents, to propagate the aims and objects of the association and to enlist members.

6. Since no statement of income and expenditure is available at present, it is hereby resolved to authorise the secretary to spend at the rate of one hundred rupees for month, and request him to prepare the budget before the next meeting.

By order
Dr. V. SUBBARAO, A.M.A.C., BHISHAGWARA,
General Secretary.

Reviews and Notices of Books

THE SYSTEM OF AYURVEDA

We have received a copy of the above treatise by Pandit Shiv Sharma, Ayurvedacharya, formerly senior Professor of medicine and Toxicology, Dayanand Ayurvedic College, Lahore, from Messrs. Khemraj Shrikrishna Das, Proprietors, S. V S. Press, Bombay, for review.

The book consists of 356 pages full of valuable information regarding the great science of Ayurveda, very ably presented in simple and lucid English. The book is divided into six chapters. The first chapter shows that India is the birth place of medical science, while the second chapter presents the reader with a detailed discussion regarding arts and sciences of the Hindus. The third and fourth chapters discuss the scope and scientific nature of Ayurveda and the important question of the fundamental principles of the Indigenous system of medical science is fully dealt with in the fifth and sixth chapters. Besides these, we read the author's conclusion with three Appendices which consist of many valuable and authoritative opinions in support of this vast science from various important medical journals and great medical scholars.

The book as a whole might be taken as a valuable and most up-to-date introduction to the great science of Ayurveda and the author, in our opinion, has succeeded wonderfully in his attempt to induce even new adepts to take interest in the science, not to speak of those who are already in for same.

The printing, get-up, binding and paper are all very decent and the price, Rs. 6 is not much considering all these as also the importance of the book.

In our opinion, the book will have a good circulation and no library or institution should go without a copy.

The book is available at Messrs Khemraj Shrikrishna Das, Proprietor, S. V. S. Press, 7th Khetwadi, Bombay. H. N. C.

LATHYRISM or KHESHARI DAL POISONING

Second edition, 1929, publish by Star Medical Hall Book Dept., Price Rs 3, Postage Extra.

The author of the book, Dr. Girindranath Mukherjee, B.A., M.D., F.A.S.B., Vishagacharyya, author of many other authoritative works on Ayurveda, is not a new figure in the Ayurvedic world.

The book was published for the first time in 1925 and had a steady sale. The popularity of the book may be gauged from the fact that the author had to publish a second edition so soon. The edition under

review is an enlarged and revised one, printed in clear types with ideal paper and binding and consists of about 150 pages with an index of xxii pages. The book contains a full and trustworthy record on the subject it deals which can be found nowhere else. Dr. Mukherjee is to be congratulated on the present work which is a valuable addition to the medical science. It is a store-house of a sound foundation of facts about this common but insufficiently known disease. It may be said safely that Dr Mukherjee's book is perhaps the only book in the world in English language on the subject.

The author's long experience of the disease from the clinical and experimental points of view entitles him to be considered as an authority. A concise, accurate and scientific treatment of the disease in all its aspects has been presented to us and we thoroughly recommend the book to all those who have to deal with lathyrism wherever it occurs

H. N. C.

PULSE IN AYURVEDA

By Dr. Ashutosh Roy, L.M S., Second Edition ; Pp. 108, Royal Octavo with a Foreword by Capt. G. Srinivasamurthi, Principal, Indigenous School of Medicine, Madras, with Preface and author's introduction, Pp. 16 ; published by Journal of Ayurveda, Calcutta ; Price Re 1-8-0 only.

The first edition of the book was published in 1926 from Madras and the present edition is a revised and enlarged one. Besides, it has got two new sections discussing fully the well-known Tridosha theory of Ayurveda in all its aspects and European sphygmographical pulse tracings in different diseases and their interpretations according to Ayurveda with 36 illustrations.

The present volume is about three times as large as the first one and contains much valuable information hitherto inexplicable or unknown to the medical world. The author should be congratulated on his valuable contribution to the medical science by bringing out this treatise on the important problem of pulse examination and its pathological aspects.

Some portions of this book were published in the pages of Journal of Ayurveda and we could not check the temptation of bringing the whole thesis as a complete book, as, in our opinion, this is considered to be the best and most up-to-date work on Pulse.

Dr. Roy is already a known figure in the domain of Ayurveda and the present work is worthy of his scholarship and study. The printing, paper, binding and get-up are all that could be desired and the low price is solely meant for wide circulation.

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the arrangement good and expression sound. We have no doubt the book will have a vast circulation. The book is available at Indian Medical Record, Book Dept., 2, Horokumar Tagore Square, Calcutta.

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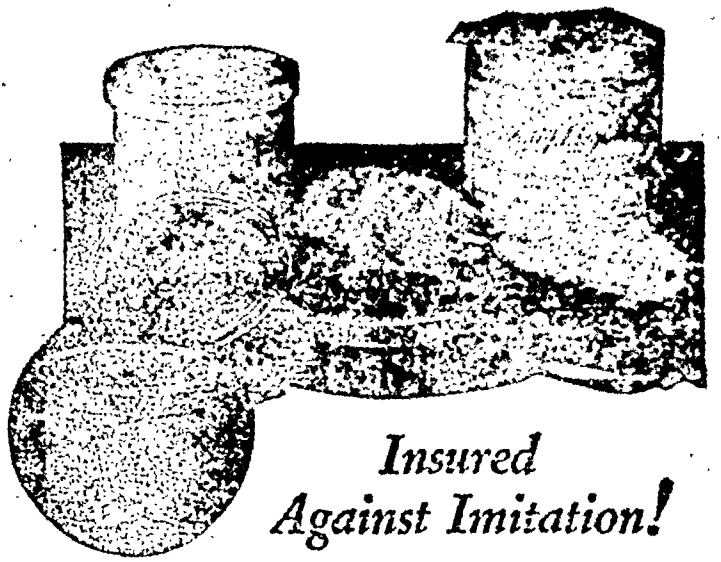

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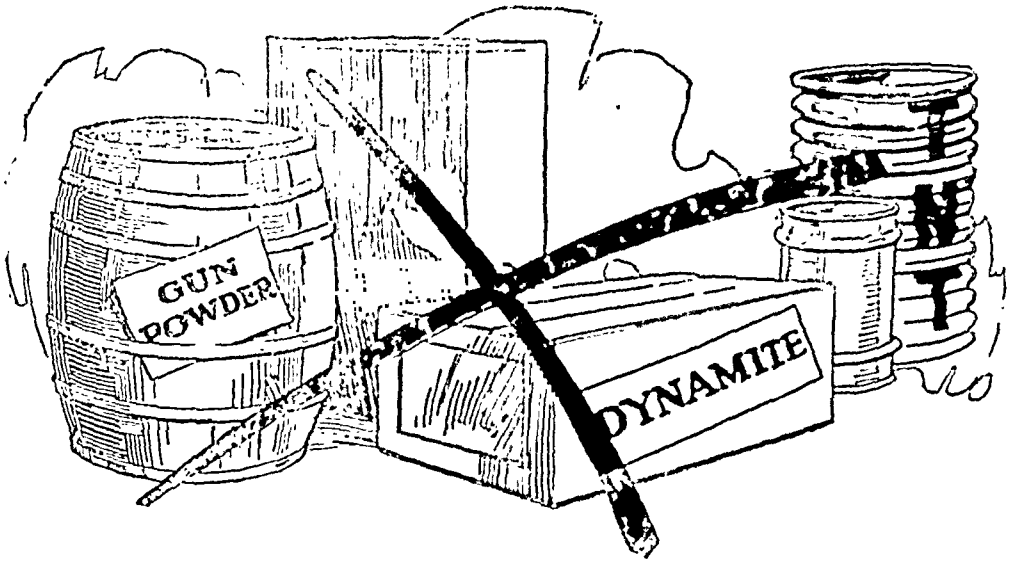

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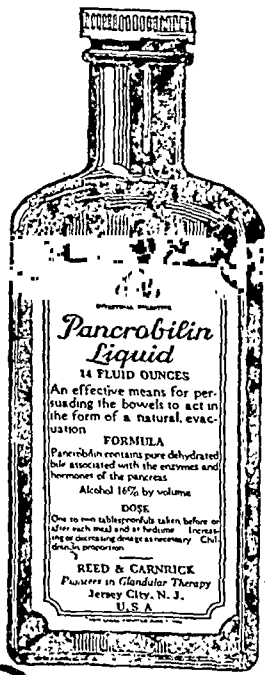

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THE JOURNAL OF AYURVEDA

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Patent Medicines

VAIDYA D. S. DEHADRAI,

WARDHA C. P.

—:o:—

Of the advertisements seen in the newspapers and on boards, more are of medicines than for any other article. Advertisements for new and wonderful 'medicines' make their appearance daily. Patent medicine-sellers take advantage of the fact that most people, when they get sick, think that all they need to do to recover is to take a few pills or a few doses of medicine. Several hundred years ago, even physicians did not understand the nature and cause of sickness ; they thought that disease was due to some mysterious evil influence. Not knowing the cause, they of course did not understand the proper way to treat and cure disease. In those days a man did not have to spend several years in college, studying sciences such as anatomy, physiology etc., in order to be a 'Doctor'. All that was needed was to learn from his father or grandfather how to compound some mysterious mixtures. Sick people believed that their sickness was due to some mysterious cause, and so the more mystery there was connected with the medicine, the more efficacious it would be. Such were the ideas of the past, and, sad to say, some of these ideas still cling to many people of India.

It is folly for one who is sick to buy a medicine of whose composition he knows nothing and put that

medicine into his body, concerning the structure and functions of which he knows so very little. When seriously sick you should go to a dispensary where there is a competent physician, who has carefully studied the body and its diseases. He can advise as to what to do to cure the disease. There is an adage to the effect that "when one is sick and treats himself he has a fool for a physician and a fool for a patient." This adage is especially true in the case of those who use patent medicines.

The men who make the medicines that are advertised in the newspapers know that every one, at some time or other, has pain in the back or a headache or a cough; and so they use every means to frighten people, and make them think that if they have any of these symptoms, they are afflicted with some serious illness. Having frightened a person into beleiving that he has some serions illness, they proceed to tell about some wonderful remedy that is a sure cure for that illness.

Most of the medicines advertised in the news-papers are compounded from inexpensive materials. The medicine maker may take four annas worth of alcohol and add water to this together with a little colouring matter and something to give it a flavour. The actual cost of all the ingredients together with the bottle may not exceed eight annas, but it is retailed at about six Rupees per bottle.

People are deceived by the false statements made in the advertisements. They buy a bottle of some medicine. Many of the widely advertised patent medicines contain either alcohol, morphine or cocaine. It is well known that when one begins to take any of these drugs, a habit is soon formed, so that the more he takes, the more he wants. The patent medecine seller and the quack creator know this. They know that when a sick person has taken one bottle, he will certainly want the second bottle; so often times they will give the first bottole of medieine without

charge to serve as a bait. Do not be deceived by the false statement in the advertisements. Do not put too much confidence in the testimonials of people who say they have been cured.

Some may say that they have been really cured by a medicine advertised in a news-paper. In that case, it is very probable that they would have recovered more quickly if no medicine had been taken. In the investigations made in Europe and America during the past few years it has been found that many children and grown-up people have been poisoned by taking patent drugs. The patent drug user is taking almost as much risk as would a sick man who should go into a drug store in the dark, take down from the shelf the first bottle he found, and proceed to drink the cotents. Every one would call such a man very foolish for doing such a risky thing; yet every patent drug user repeatedly takes such a risk. It is of this fact only that the Nasik Ayurvedic Conference has decided once for all not to allow any patent drug to be placed in any of the Ayurvedic exibitions in future unless and until its formula and ingredients are handed over to the presiding Committee

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OUR GOLDEN JUBILEE NUMBER IN JANUARY, 1930.

We are glad to announce that we are going to celebrate our Golden Jubilee in January 1930. A special issue of the Indian Medical Record will be published on the occasion and life sketch of our contributors, past and present, with their photos will appear in same.

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The size of the issue is expected to be double that of an ordinary one and we expect to print a very decent number. Special features will be a history of the journal, life sketches of our contributors, up-to-date Medical History, articles of prominent medical men, etc., etc. Price, Rs. 2/-

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Original Articles

SODIUM MURAS

BY

AMRITLAL D. TRIVEDI, L.C.P.S. (BOMB),

Jam-Raval.

—:o:—

SYNONYMS IN VARIOUS VERNACULARS :—

San.—Lavana.
Beng.—Lavana
Hind.—Nimaka.
Marathi—Mita.
Guj.—Mithu.

Source—Himalayan, Dega and Gumma mines.

Varieties—There are eight varieties of Lavana according to Ayurveda. Some of the varieties are not obtained from the market now a days.

The eight varieties described in Ayurvedic Texts are as under :

(1) Rock salt (saindhava) is sold in the market and could be easily obtained from the mines.

(2) Samudra mitha or common salt is sold in the market and is prepared in the sea coasts.

(3) Bitlona or Vadagara mitha. This variety of salt is prepared by boiling the common salt in the juice of Amalaki. This is sold in the market and could be easily obtained.

(4) Saubarchala (black salt). This variety of salt is sold in the market and could be easily obtained.

(5) Sabarmitha
(6) Audamitha.
(7) Gutika
(8) Pashunja.

The remaining No. 5, 6, 7 and 8 varieties are not easily obtained from the market and hence rock salt is used instead.

Action—Antacid, stomachic, and carminative.

Dose—3 to 15 raties or 6 to 30 grs.

AYURVEDIC PREPARATIONS :

(1) Lavana Bhaskara Churna :—common salt 32, Black salt 20, Bitlona 8, Rock salt 8, Corriander seeds 8, Pipper longum 8, Pippali mula 8, Kalijiri 8, Talispatram 8, Cobra's saffron (Nagakeshara) 8, Tamalpatram 8, Cinamon bark 2, cardamom seeds 2.

Directions—Powder and mix and rub all the ingredients in the lemon juice or Amlavetasa in a morter and let it become dry in the shade. Rub it in morter and bottle it up.

Dose—¼ to ½ tola or 45 to 90 grs.

(2) Astanga Lavana churna—Jiraka 1, Amalaki kshara 1, Cinamon bark 1, Cardamom seeds 1, Black round pepper 1, Sauvarchala (Blak salt) 1.

Directions—Rub all the ingredients with lemon juice and let it become dry. Take sugar 1 and mix to the above churna.

Dose—3 to 15 raties or 6 to 30 grs.

(3) Lavana Panchaka Churna—Rock salt 1, Common salt 1, Bit lavana or Vadagara mitha 1, Sauvarchala (Black salt) 1, Sabar mitha 1.

Directions—Powder and mix.

Dose—3 to 15 raties or 6 to 30 grs.

(4) Somagni Rasa.

Take Lavana Panchaka churna one part and rub it in a morter with ginger root juice for one day, till it is prepared into a pill-mass. Divide it into pills of three rati each.

(5) Sindhaluna Taila—Rock salt 1, sweet oil 4, whey 16.

Directions—Rub the rock salt with whey and sweet oil and put it under fire in an open iron pan. Let it remain on fire till clear oil remains.

PHARMACOLOGY AND THERAPEUTICS :

Externally : skin—Solution of common salt 3 p. c. is used to clean ulcers and it is used as a compress to heal ulcers, owing to its healing properties. Sindhaluna Taila is used as a liniment in sprains, ankyloses and rheumatic joints. Very thick paste of common salt is applied externally as an antiphlogistic to lessen the swelling.

Internally : Gastro-intestinal tract—Lavan is stomachic, antacid, and carminative and hence it is used as such in indigestion, acid dyspepsia, colic, tympanitis and habitual constipation.

Any of the Ayurvedic preparations, containing Lavan, is administered with marked benefit in the above said complaints. Somagni Rasa is of especial value in cholera because it checks vomiting and purging marvellously.

Liver—It is used to stimulate the bile flow and thus it is useful in biliary stones, etc.

Metabolism—It is prescribed to cure obesity and how far it works is an open question; still however the Ayurvedic preparation named Astanga Lavan Churna is used in this disease with some success.

THE PULSE CONDITION IN VARIOUS DISEASES ACCORDING TO AYURVEDIC MEDICINE

BY

DR. EKENDRANATH GHOSE, M.Sc., M.D.

Professor of Biology, Medical College, Calcutta.

———:o:———

(Continued from our last issue)

(86) Vaktraroga

नाडी द्रुतं वहति मांसला निश्चलाङ्गी क्रूरा
वलावलयिनी खलु वक्त्ररोगे। II. 4 ; ना. वि. त.

The pulse beats quickly, is fleshy (that is, deep-seated or felt with difficulty), nearly imperceptible, curved, and is forcible or not (that is, sometimes forcible and sometimes not, or forcible in some cases and not in others.)

The vaktraroga seems to be *cancrum-oris* or gangrenous stomatitis, which was so frequent a complication in Kala-azar in earlier days (then considered as malarial cachexia).

(87) Valasa or septic sore-throat.

(1) वलासे स्फुरणोपेता सूक्ष्मा द्रुतगतिर्भवेत्। II. 20

In valasa, the pulse becomes jerky, fine (thready) and frequent.

(88) Vatarakta or leprosy.

वातरक्ते च मन्दास्याद् वक्रगा कठिना मृदुः। II. 38
वातरक्तेपि चञ्चला II. 42

(3) नाडी स्थिरा वहति निश्चलिता कृशाङ्गी।
क्रूरा बलत्वनयनी खलुवातरक्ते ॥ ना. वि. त.

(1) In leprosy the pulse is slow, curved hard or soft.

(2) *In leprosy the pulse is frequent.*

(3) In leprosy the pulse is quiet (nearly imperceptible), motion less, slender, crooked and forceless (that is, very soft).

Vatarakta seems to be the early erythematous stage of leprosy.

(89) Vadhaka or Dysmenorrhoea.

नाडी स्थिरा पुष्टा च बाधके। II. 4 ; ना वि, त.

In Vadhaka, the pulse is quiet (that is very slow) and full. The pulse condition is evidently due to the pain accompanying the flow.

(90) Vadhirya or deafness.

(1) विद्राविनी मांसल विस्तृता स्यात्क्ष्वेडादि
बाधिर्य्यगदेच नाडी । II. 4 ; ना. वि. त.

(2) तु बाधिर्य्ये कर्णनादे च कर्णशूलेच चञ्चला । II. 42.

(3) बाधिर्य्ये कर्णशूलेच कर्णनादे च चञ्चला । ना. वि. त.

(1) In ringing of the ears and deafness (or in deafness in connection with ringing of the ears and others), the pulse is flowing (running) and remains extended beneath the flesh (that is, feebly perceptible).

(2), 3) In deafness, ringing of the ears (tinnitus aureum) and earache, the pulse becomes frequent.

(91) Vayu roga. The pathological conditions usually placed under this heading correspond to those diseases in which the central nervous system is affected.

(1) वायुनानाडिका ज्ञेया वक्रा, सोष्णा बलावहा
निर्म्मला रोगशङ्करा नानाविधगतिर्भवेत् ॥ II. 37 ; II. 4.

(2) वातरोगे स्थिराचस्यादावृतेसर्वलक्षणा । II. 20 ; II. 42.

(3) वाताश्रये स्थिरा सोष्णा सूक्ष्मा द्रुतगतिर्भवेत ।
क्षीणा स्थिरा वक्रगति शुद्धवायोः सुरेश्वरि ॥ II. 42 ; ना वि. त.

(4) নানাগতি বায়ু রোগে । II. 9

(1) In Vayu-roga the pulse is said to be curved, jerky, forcible and pure ; in combination of diseases, it beats in various ways.

(2) In vayu-roga the pulse is quiet ; in a mixture of diseases it shows the characteristics of all the derangements.

(3) In vayu-roga, the pulse becomes quiet (nearly imperceptible), jerky, fine (thready and frequent; in pure vayu condition, it becomes weak, quiet and curved.

(4) In vayu-roga the pulse takes different characters.

In addition to the characters usually ascribed to derangement of vayu, the pulse conditions distinctly indicate a variety of diseases grouped under the term vayu-roga.

(92) Vicharchika or psoriasis.

(1) विचर्चिकायां कटु । II. 12.

(2) विचर्चिकायां सर्पयानं जलूवक्रवृत्तं ॥ II 12.

(1) The pulse is hard in vicharchika.

(2) The pulse shows the progression of a snake, and is curved and rounded like (the progression of) a leech.

The pulse conditions as depicted here are seen in an acute type associated with gout and osteo-arthritis.

(93) Vilambika. It seems to be a form of intestinal stasis.

(1) विलम्ब्यां स्तब्धातिद्रुतं । II 4 ; ना वि. त.

(2) विलम्बिकायां प्लवगा कदाचित् ॥ II. 4 ; II 38 ; ना. वि त.

(1) In vilambika, the pulse becomes motionless (that is, nearly imperceptible) and very quick.

(2) In vilambika the pulse is rarely jerky.

(94) Visha or poisoning.

(i) Poisoning in general.

(1) उत्पित्सुरूपा विषदिष्टिकायां [1]

II. 4 ; II. 18 ([1] विषदुष्टिकायां) ; II 38.

The pulse beats with celerity or very frequently.

(ii) Animal poinson,

सस्थूलाक्षीणयाता चलति यदि शिरा जङ्गमानां विषेषु । II 4

The pulse becomes large (full) and slow. The common animal poisons are those of centepede, scorpion, some insects and lastly those of snakes. The real condition cannot be made out ; probably it refers to the bites of centepede. scorpion and insects.

(iii) Vegetable poisoning.

नानाभावं प्रयाता चलति यदि शिरा स्थावराणां

विषेषु । II. 4 ; ना. वि. त.

The pulse beats in various ways. Such a vague note is no doubt due to the vast number of vegetable poisons known to the people.

(95) Visarpa or erysipelus.

घोरा विशीर्णगमना चटुला प्लुताङ्गी
दर्वीकराकृति मन्थरगामिनीयां
मांसाङ्कुरातिवियुता सविलोल गात्रा
नाडी कठोरनयिनी स्खलिता विसर्पे ॥ II. 4 ; ना. वि. त.

The pulse is distressed (that is, weak), slender, frequent, jerky, slow-going like a snake ; if attended with much swelling, it becomes tremulous, hard and intermittent.

(96) Visuchika or cholera.

(1) विसूचिकायां साक्षीणा स्थिरा मन्दवहा स्मृता ।
चञ्चलापि क्वचित् तस्यां सोपसर्गेन हे प्रिये ॥ II 42

(2) विसूच्यांदुर्लब्धा [तुस्तब्धा] भवति लघु [बहु] मांसोच्छ्रयकरी ।
II. 4 ; II. 37 ; ना. वि. त ।

(3) विसूच्यां दृश्यते नैव नैवस्थानं विमुञ्चति ।
II. 4 ; II 38 ; ना वि. त.

(4) विसूचिकाभिभूतेच भवन्ति भेकवत् क्रमा । II. 4 ; II. 41.

(1) In cholera, the pulse becomes feeble, nearly imperceptible and slow beating ; sometimes it becomes frequent due to complication.

(2) The pulse is felt with difficulty (nearly imperceptible), is light (that is, very soft) and as if rising out of flesh (that is, completely recedes from the examining fingers in the intervals).

(3) Although the pulse is not felt in the wrist, it does not leave the place.

(4) In affection with cholera the pulse beats like the progression of frog.

We can easily understand that the different pulse conditions quoted above refer to the different stages of cholera. (a) The pulse, slow, soft and nearly imperceptible pulse [depicted in (1) and (2)] is seen at the end of the stage of preliminary diarrhoea or in the beginning of the collapse stage. (b) The imperceptible pulse (that is, the pulseless condition) is characteristic of the collapse stage. [as in (3)]. (c) The jerky pulse is seen in the stage of reaction [depicted in (4)]. The cholera-typhoid condition (with delirium, high temperature, oliguria, with subsultus tendinum and finally coma) is attended with a rapid feeble pulse [as depicted in (1)].

(97) Visphota (Furuncle or boil).

विस्फुट नाडी परिनिष्ठुराङ्गी चलच्चकोराकृति विह्वला स्यात् ।

II. 4 ; ना. वि. त.

The pulse in boil (carbuncle) becomes very jerky, beats like the chakara (the Greek partridge) and is unsteady.

(98) Vepathu (paralysis agitans).

दीर्घा कृशा वातगति विषमा वेपथे धरा । II. 20

वेपथोर्वा सम्भवं व्रजति द्रुतं । II. 20

The pulse in vepathu is elongated (that is, with a long wave having a slow low rise and fall), slender, with a Vayu-movement (that is, characteristic of Vayu) and is abnormal.

(99) Vrana. It variously means wound, bruise or ulceration.

(1) व्रणेऽतिकठिने देहे प्रयाति पैत्तिकं क्रमं ।

II. 4 ; II. 38 ; II. 36 ; ना. वि. त.

(2) ज्ञेया विशीर्णगमना परितोतिशीर्णा सूक्ष्मा

सपिच्छिलगति व्रणिनस्य नाडी । II. 4 ; ना. वि. त.

(3) व्रणे चञ्चला । II. 42

(1) In a very hard vrana (the first stage of induration) of the body, the pulse beats like Pitta (Pulse) (that is, jerky and low-tensioned).

(2) The pulse is said to be slender-going, very soft, fine (thready) and smooth (that is, with a very low rise) in vrana.

(3) The pulse becomes frequent in vrana.

The pulse characters evidently point to the different stages of the inflammation and the condition of the patient. In the first stage of induration (congestion and stasis) the pulse is jerky and low-tensioned (a febrile condition of the patient). The pulse becomes frequent in both the first stage of stasis and the stage of suppuration. In an extensive abscess with asthenic condition of the patient the pulse necessarily becomes small, thready and soft.

(100) Vranasotha.

(1) व्रणशोथेऽपि चञ्चला । II. 42

(2) स्थूला विलोलगमना परिनिश्चिताङ्गी

स्यात् पिच्छिला वलयिनी व्रणशोथे नाडी ॥ II. 4 ; ना. वि. त.

(1) In vranasotha the pulse is frequent.

(2) In vranasotha the pulse is quick (or beats with celerity), full (that is, well felt), slippery (that is, with a low ascent and running quickly beneath the examining fingers) and is forcible.

The vranasotha seems to be a swelling and induration of the skin and subcutaneous tissue as we find in the first stage of cellulities before going on to suppuration.

(101) Vidradhi or abscess.

नाडी विशीर्णागमना परितोविरूद्धा विश्लेषगा खलु विकोलसमान गाढा । मूलात्प्रयाति चिरं सुचिरप्रवृत्ता स्याद् विद्रधौ मुनिवरैर्भणिता विशीर्णा ॥ II. 4

The pulse is slender, abnormal in every respect, having the beats separate from one another and frequent (or shaky) ; it always takes time to pass from the base (that is, the pulse wave is very slow to pass from beneath the first examining finger to the third one). Such a pulse is said to be seen in vidradhi by the *munis*.

(102) Sirograha of stiff neck.

शिरोग्रहे भवेन्नाडी वातपूर्णाच चञ्चला । II. 37 ; ना. वि. त.

The pulse becomes Vayu-affected (that is, shows characteristics of Vayu) and frequent.

(103) Siroroga (headache).

(1) शिरोरोगेऽति चञ्चला । II. 42

(2) शिरोगदे कर्कशधीरगा स्याद्वर्त्तिकालाबावप्लुतगा नाडी । ना. वि. त.

(1) In siroroga the pulse is very frequent (that is, beats with celerity).

(2) In siroroga the pulse becomes harsh (that is, sharply strikes the examining fingers), slow-going and jerky like (the progression of) vartika and laba (quails of two kinds).

(104) Sitardita or exposure to cold.

शीतार्दितस्य गात्रस्य चिरात् सूक्ष्मा

In one exposed to (severe) cold, the pulse becomes fine (thready).

(105) Sitapitta or urticaria.

(1) शीतपित्तेपि चञ्चला । II. 42

(2) शीतपित्त तथोदर्दे समाना गुरुपिच्छिला ।

मूलाद् वहति वेगेन क्रुरा चञ्चलगामिनी ॥ II. 4 ; ना. वि त.

(1) The pulse is frequent (or beats with celerity) in sitapitta.

(2) In sitapitta and udardha (a condition with swelling and redness of the skin), the pulse is equally large and smooth (that

is, with a low curve), beats forcible from the base (that is, the individual beats are distinct from each other and have somewhat steep rise), is curved and frequent.

The text evidently means a large quick pulse with a medium tension (intermediate between pitta and kapha pulse according to the Ayurvedic conception).

(106) Suskavavahuka or stiffness of the shoulder-joint.

शुष्कावबाहुके नाडी क्रूरा च वक्रिणी । II. 4 ; II. 37 ; ना. वि. त.

The pulse becomes crooked and curved.

(107) Sukadosha. A disease of the male external genital organ by the application of suka, a water insect (the common water beetle). The application is generally made in the form of a plaster prepared by grinding the insect.

बहुचटुलविलोला निर्म्मला पिच्छिला स्यात् ।
सपवनकफलिङ्गी शूक दोषस्य नाडी ॥ II. 4 ; ना वि. त.

The pulse in sukadosa is very quick and tremulous (shaky), pure (that is, the beats are quite distinct from each other), smooth (with low, rounded top) and shows the characteristics of Vayu and Kapha.

(108) Sula or colic.

(1) शूले मन्दगतिर्वहति सततं विश्लिष्ट विस्फारिणी ।
मण्डुकाकृतिगामिनी पटुतरा नाडी करायाच्युता ॥ II 4 ; ना वि. त.

(2) शूलरोगे तथा चीणा नाडी स्यान्मन्दगामिनी । II. 42

(1) In coliky pain, the pulse beats slowly ; the beats are always separate and bounding (expandable), it beats like the progression of the frog, is forcible and also falls down (recedes) from end of the hand (examining fingers).

2) In sula the pulse becomes feeble and slow.

The pulse conditions depicted above evidently arises reflexly from the pain. The pulse characters in (1) is due to a moderate pain ; whereas those of (2) indicates a more severe attack.

Next we come to colicky pains which are said to be due to derangements of *Vayu*, *Pitta* and *Kapha*.

वातेनतलेन मरुत् प्रवेन सदाशुवक्राहि शिरा वहन्ति । ज्वालामयी पित्तवेष्टितेन साध्मान शूलेन च पूष्टिरूपा ॥ II 4 ; II. 36 ; II. 41 ; II. 38 ; ना. वि. त.

In vayusula the pulse becomes very crooked due to derangement of vayu ; it is jerkey when pitta is deranged ; and it is stout (full) when the sula is accompanied by flatulence (tympanitis).

The vayusula seems to be colicky pain associated with gastro-enteritis. The Pitta sula is the common intestinal colic.

The adhmana sula (called by some as amasula) is gastralgia (gastric colic).

(109) Sonita dosha. It seems to be anæmia (probably some condition with severe anæmia).

गुर्द्वोचोभपरायणा स्फुटमला स्थूलाविलोलाकृति
मन्दं मन्दमुपैति मन्थरगति स्तम्भेरम प्रेङ्खिनी ।
अग्राद्धावति मध्यमन्द गमना पश्चाद्व्रजत्यच्छ्रिता
नाडी शोणित दोषिणां गुरुमुखात्तज्ज्ञेया स्फुरद्बुद्धिभिः ॥

II. 4; ना. वि. त.

In sonitadosha the pulse is full, exciting (that is, jerky), with apparent derangements, large and quick (that is, beats with celerity); it gradually becomes slow and stops like a pillar; it runs from the front, has a moderately slow movement and becomes jerky as it moves onward.

(110) Sotha. This term is meant for any form of swelling of the skin and the tissues beneath, and is made to include both inflammatory and dropsical swellings.

(1) शोथे च मन्दा क्षीणा च नाडिका । II. 4

(2) अति क्षीणा शोथे भवति पृथु नाडी कुहरिणी
प्रयात्यग्रं मूलाद्बहुवलिता स्कन्द रहिता ।
यथा तैरेपुरे व्रजति सहसा मन्दशफरी
तथा नाडी विश्वग्व्रजति सलिलाक्रान्त पलले ॥ II. 4; ना. वि. त.

(1) In sotha the pulse is slow and feeble (small).

(2) In sotha the large pulse becomes very feeble and empty (low-tensioned), first moves from the base being very forcible and is jerkless (that is not jerky); as the sapharipunti suddenly moves in a collution of water, so the pulse moves in the flesh filled up with water.

The pulse condition is distinctly meant for a dropsical condition. The characters indicate that we are dealing with "pulsus mollis," perhaps that form which is known as the gaseous pulse (see DaCosta, Physical Diagnosis, page 323).

(111) Slipada or elephantiasis of the leg.

(1) नाडी श्लीपदवाहिनी विरलिता स्थूला विलोलाशया ।
मूलाद्धावति पिच्छिला क्षतजरा वक्राकृतिर्गामिनी ॥ II. 4; ना. वि त.

(2) श्लीपदे चञ्चला । II. 42

(1) In slipada the pulse is slow and full, has a tendency to trembling, runs from the base, is smooth (with low rise and rounded), afflicted with sore (that is depressed and soft) and is curved.

(2) The pulse beats with celerity in slipada.

(112) Swasaroga or asthma.

(1) श्वासे तीव्रगति र्नाड्या भवेच्च निश्चितं ।
सदा द्रुताच कठिना वेगा जलौका गतिरेवच ॥ II. 38

(2) श्वासोल्लने वक्रगतिं प्रयाति । II 42.

(1) In swasa the pulse becomes surely forcible, it is always quick and hard, like the progression of a leech.

(2) The pulse becomes curved in swasa.

(113) Striroga

(1) स्त्रीरोगे मन्दा बला । ना. वि. त.

(2) नारीगदेषु क्षीणास्यात् जडतः गच्छेत् तत्रस्यात् मन्दवाहिनी ॥ II. 42

(3) ক্ষণে প্রবল ক্ষণে ধীর নাড়ী যদি হয় ।
স্ত্রীরোগ বলিয়া তাহা জানিহ নিশ্চয় ॥ II. 9

(1) In female disease the pulse is slow and forcible.

(2) In female disease the pulse is feeble and the beats are fused with one another; it is slow-going.

(3) In female disease the pulse is strong at one time and weak at another time.

In chronic uterine complaints the patient becomes much debilitated with low pulse conditions.

(114) Sadyovrana or wound.

(1) सद्योव्रणे निष्ठुरवाहिनी सा क्रूरा विधुनतपरा परितः प्रवाहा ।
II. 4 ; ना. वि. त.

In wound the pulse is hard, curved and trembling (that is, with a low, rounded curve).

(115) Sutika. A form of pernicious anæmia after delivery.

(1) क्षीणामन्दगतिश्चैव सूतिकायां II. 142

(2 सूतिकायां स्थिरावला । ना. वि. त.

(1) In sutika the pulse is weak (small) and slow going.

(2) In sutika the pulse is quiet (that is, nearly imperceptible) and feeble.

(116) Somaroga. It is diabetes (diabetes mellitus or phosphatic diabetes).

सोमरोगे च क्षीणा स्यात् । ना. वि त.

In somaroga the pulse is feeble (small).

(117) Swarbheda or hoarseness.

(1) गम्भीरा स्वरभेदके प्रचलिता तन्तुप्रभा संचुर्णिता । II. 37 ; ना. वि त.

(2) गम्भीरा स्वरभेदे स्यात् चलं तन्तुसमं तथा । II. 4.

(3) स्वरभेदे च सूक्ष्मा नाडी । II. 38

(4) स्वरभेदे च सूक्ष्मा स्यात् नाडी क्षीणा । II.

(1) The pulse in hoarseness is thready and very small.

(2) The pulse is deep-seated and beats like a thread.

(3) The pulse is fine (thready).

(4) The pulse is fine (thready) and feeble (small).

The pulse conditions probably indicate tubercular laryngitis (or cancerous affection of larynx).

(118) Halimaka (Malignant jaundice).

(1) क्षीभादाशु हलिमके प्रचलति प्रध्यानशीला दृढा ।

II. 4 ; II. 38 ; ना वि. त.

(2) हलिमके । II. 42

(1) In halimaka the pulse becomes soon tremulous (low) and deep-seated.

(2) The pulse in halimaka is quick (beats with celerity).

(119) Hikka (Hiccough).

(1) हिक्कायां बहुकम्पिता द्रुतवहा स्पष्टा निविष्टा शिरा ।

II. 4 ; II 37 ; II. 17 ; ना. वि. त.

(2) हिक्कायां चपला । II. 42

(3) हिक्कायां बहुकम्पा सा तथा च द्रुतगामिनी । II. 4 ; ना. वि त.

(1) In hiccough the pulse is very shaky, frequent, distinct (that is, the beats are distinct from one another), and curved (that is, feebly perceptible and seems to be covered by flesh).

(2) The pulse is frequent.

(3) The pulse in hiccough is very shaky and frequent at the same time.

(120) Hridroga or heart disease.

(1) हृद्रोगेतु भवेन्नाडी राजहंसगतिर्तथा । II. 38

(2) हृद्रोगे अलक्षाक यानं । II. 12

(3) हृद्रोगे चपला क्षीणा । II. 42

(4) हृद्रोगादाय कठिना मथिता निरङ्गा ।

नाडी द्रुतं वहति सापरिमिश्रमध्या ॥ II 4 ; ना. वि त.

(1) In heart disease the pulse beats like the progression of a goose.

(2) In heart disease the pulse beats like the progression of a water crow.

(3) In heart disease the pulse is frequent and weak (small).

(4) In heart disease the pulse soon becomes hard (forcible), agitating, bodyless (completely receding between the beats), becomes frequent and moderately low in ascent.

It is rather difficult to ascertain how far the Ayurvedic physicians were able to recognize the type of heart diseases; but it is well-known that many physical signs referable to heart can be elucidated by inspection and palpation in fairly advanced cases.

The pulse condition may be put together under two headings: (1) The weak, soft pulse, slow or frequent, may be indicative of dilatation of heart. (2) The forcible, leaping pulse is characteristic of aortic regurgitation.

APHRODISIAC REMEDIES IN THE BRIHAT SAMHITA *

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INTRODUCTION.

Varahamihir, the celebrated astronomer and astrologer of whom India is proud, flourished in the reign of king Vikramaditya of Ujjayini. He was the successor of another famous astronomer, Aryabhatta and one of the nine gems of the court of Vikrama :—

धन्वन्तरिक्षपणकामरसिंहशंकुवेतालभट्टघटकर्परकालिदासाः ।

ख्यातो वराहमिहिरो नृपतेः सभायांरत्नानि वै वररुचिर्नव विक्रमस्य ॥

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* While glancing over the old files of the Ayurveda Vijnan, edited by Mr. D. K. Shastri, I found out an article named 'Kandarpika', editorially contributed. Though the Brihat Samhita is a common property of all, I must mention my friend, who is a predecessor of mine in the present subject and his article from which I have derived some historical information, incorporated in the present article.

It is a question how much historical importance may be attached to this verse, for minute antiquarian research convinces us that all of the nine geniuses were not contemporaneous. Some make bold to assert that the verse is an interpolation by one ingenous *yati* (jain) in the book 'Jyotirvidabharan' in which it also occurs It well reminds of the poetical line "like orient pearls at random strung" according to them. In his another astrological treatise, the Brihat Jataka, the author gives us some autobiographical information :—

आदित्यदासतनयस्तदवाप्तबोधः कापित्थिके सविहलब्धवरप्रसादः ।

आवंतिको मुनिमतान्यवलोक्यसम्यग्घोरां वराहमिहिरो रुचिरां चकार ॥

He was the son of Aditya Das who was also his preceptor in astrology. In a village named Kapitthika he got a boon from the Sun. He was an inhabitant of Avanti or modern Ujjain in Malwa, etc.

"The Ujjayini list compiled by Dr. Hunter, as well as Alberuni, give A. D. 505 as Varahamihir's date, and it is probable that this was the date of his birth..... .....and it has been ascertained by Dr. Bhao Daji that the astronomer died in 587 A. D." Historians are unanimous in their opinion that he flourished in the sixth century A. D.

Among his astronomical works, the Brihat Samhita is much in vogue with Indian Pundits who specialise in astrology, as it is a mine of multifarious information, being of an encyclopaedic nature. It has no less than 106 Chapters and the subject of our presect article which goes by the name of कान्दर्पिक (pertaining to sexual science, literally to Cupid) forms the 76th Chapter of the great book. To speak without restraint, the subject given by Varahamihir does not throw any original light on the aphrodisiac remedies known to us from the older Ayurvedic Samhitas but it is a critical compilation, couched in clasical Sanskrit, from the then available Ayurvedic literature to suit the requirements of his encyclopaedic work, otherwise known as the Varahi Samhita. And to speak the truth, we cannot expect original Ayurvedic research from a genius whose special subjects of study were astronomy and astrology.

I give below the original text of the Chapter in Sanskrit with copious critical notes culled from various sources so as to have a thorough grasp of the comparative estimate of the subject discussed. The general reader may omit the notes given in

secrecy, garlands of flowers—all these constitute a veritable net of cupid. (2)

[These are non-medicinal aphrodisiacs or the adjuvants of them. As the consummation of a Rasa or sentiment needs the well-known constituents विभाव, अनुभाव, सात्त्विकभाव, and व्यभिचारिभाव, so does the Vajeekaran also. The effects of things other than medicines cannot be denied, for they have a close reference to the principles of physiology and psychology. Charaka unequivocally says :—

"संकल्पो ह्यप्राणाम्" "संकल्पः स्त्रीसंकल्पः" (चक्रः) "संकल्पः स्त्रीसंगमे तद्गुणादिविकल्पनम्" (इन्दुः)। Even the very idea of or deliberate musing upon a beloved is productive of aphrodisiac effects. Indu, the commentator on Vagbhatta's two works, takes the word in a different sense. Sankalpa is eulogising the merits of a beloved at the time of coition. The explanatian proposed by Chakradatta is simple, natural, and convincing while that by Indu, a bit pedantic and artificial.

Cf. :—भोजनानि विचित्राणि पानानि विविधानि च।
वाचः श्रोत्रानुगामिन्यस्त्वचः स्पर्शसुखास्तथा॥
यामिनी सेन्दुतिलका कामिनी नवयौवना।
गीतं श्रोत्रमनोहारि ताम्बूलं मदिराः स्रजः।
मनसश्चाप्रतीघातो वाजीकुर्वन्ति मानवम्॥

Su. Chi. Chap. 26.

Charaka devotes no less than eleven verses on these aphrodisiac adjuvants and Vagbhatta also wakes eloquent on them as नामापि यस्य हृदयोत्सवाय etc.]

माक्षीकधातुमधुपारदलौहचूर्णं पथ्याशिलाजतुविडंगघृतानि योऽद्यात्।
सैकानि विंशतिरहानि जरान्वितोऽपि सोऽशीतिकोऽपि रमयत्यवनां युवेव॥ ३॥

He, who takes reduced Makshika (Ferri Sulphidum), honey, purified mercury (Hydrargyrum), reduced iron (Ferrum), Pathya (Terminalia Chebula), Shilajatu (Asphaltum Panjabinum), Vidang (Embellia Ribes), and ghee (in a proper dose) for 21 days, becomes as sexually powerful as a youth, even if his age be eighty. (3)

[This verse, according to my friend, Mr. D. K. Shastry, is of special historical importance. The prayoga given in the verse is conspicuous by its absence in both the older Samhitas of Charaka and Sushruta, but it is found with a slight variation in the Ashtanga-Samgraha and the Ashtanga-Hridaya of Vagbhatta :—

शिलाजतुचौद्रविङ्गसर्पिर्लौहाभयापारदताप्यभक्षः ।
आपूर्यते दुर्बलदेहधातुस्त्रिपंचरात्रेण यथा शशांकः ॥

The drugs enumerated by Varahamihir and Vagbhatta are the same. The former says that the prayoga is to be continued for 21 days while the latter says that it is to be done for 15 days. This is an insignificant difference in the same prescription. Vagbhatta includes this verse in the chapter on rasayans and that too does not count for much. It is more than once pointed out that there are many rasayanas which are aphrodisiacs also. Now which of the two has borrowed this prescription is an historical question. That Varahamihir flourished in the sixth century A. D. has already been discussed in the Introduction. The late Dr. A. M. Kunte, editor of the Ashtanga-Hridaya with the Sarvangasundara commentary, places Vagbhatta as early as the second century B. C. He adduces no less than twenty three arguments in favour of his theory. While Mahamohopadhaya Kaviraj Gananath Sen believes that Vagbhatta most probably belongs to the beginning of the fifth century A.D He writes :—

"अथ वाग्भटकालनिर्णये त्रयो हेतव उपलभ्यन्ते । तत्र इत्सिंगाख्येन चैनिकपरिव्राजकेन "अष्टांगवैद्यकसंग्राहको नवीनाचार्यः"—इत्यादि निर्देशो दृष्टिपूर्वः प्रथमो हेतुः । तेन खृष्टीयपंचमशतकारंभे वाग्भटकालोऽस्माभिःस्थापितः । etc."

He points out three points in ascertaining the date of Vagbhatta. (1) The famous Chinese traveller Hown Tsang speaks of him as "the new Acharya, the compiler of the eight divisions of Ayurveda in a systematical order." (2) Chakrapani and Dallana both quote from his works. (3) He flourished long before the eighth century A.D, in which Mahomed invaded the Sind. It is well nigh impossible that he could have composed his two works in those dire days of bloodshed and anarchy in Sind, to which country he belonged. There is one more legend which runs that Vagbhatta was called by Ravana, the demon King of Ceylon, to treat his brother Kumbhakarna. This places Vagbhatta in the Tretayuga, which is not at all tenable. The legend has no historical background whatsoever ; though the posological hints it inculcates upon a physician, are of every day practical importance. What is a particular dose of medicine suited to the mediocre strength of a man cannot be applied to the gigantic personality of Kumbhakarna, etc. Orthodox Vaidyas, it is alleged, subscribe to the theory advanced by the late Dr. Kunte in fixing the date of Vagbhatta.

Whatever may be the ultimate opinion of antiquarian scholars on the question of Vagbhatta's date, my friend, Mr. Shastry is right in supposing that it is Varahamihir who has borrowed the prescription from Vagbhatta and so the latter is anterior to the former. Historical evidence furnished by R. C. Dutta, Kaviraj Gananath Sen, and Dr. Kunte supports the same theory.

There is every reason to believe that Bhava Mishra seems to have access to the Brihat-Samhita. He selects the verse directly from the B. Samhita rather than from Vagbhatta's works as his reading of the verse bears out :—

माक्षीकधातुमधुपारदलोहचूर्णं पथ्यशिलाजतुविडंगघृतानि लिह्यात् ।
एकाग्रविंशतिदिनानि गदार्दितोऽपि माशीतिकोऽपि रमयेत् प्रमदां युवेव ॥

Some change of a word or verb here and there in borrowing verses from standard authors is characteristic of Bhava Mishra and other compilers.

For the correction and reduction of Makshika and Iron the the reader is referred to works like Rasa Ratna Samucchya, Sharngadhar, etc.

(*To be continued*)

CORRESPONDENCE

—o—

78, Mansatala Lane, Kidderpore
Calcutta, August 7, 1929.

To The Editor,

THE JOURNAL OF AYURVEDA, CALCUTTA.

Dear Sir,

I have read with great interest the excellently informative article "The debatable 'Kloma' stabilised," by Dr. Garde of Poona in the August number of your Journal to hand to-day. The number of references given in the article are really varied and illuminating. In course of my rambles (which I must confess, are rather desultory) into Sanskrit literature I have found two passages which are relevant to the subject discussed in the above article, but which, I notice, do not find place in the article above noted I give them below and I trust you will publish this letter, so that the said passages may be considered by Dr. Garde and other learned gentlemen.

1. यकृच्च क्लोमाच्च पर्वताः ।—Brihad-Aranyaka Upanishad, I. i. 1.
यकृच्च क्लोमाच्च हृदयस्याधस्ताद् दक्षिणोत्तरौ मांसखण्डौ । क्लोमान इति नित्यं बहुवचनमेकस्मिन्नेव ।—Sankara Bhashya to above. It may be remembered that the spleen consists of a number of areolae.

2. हृदयात् ते परिक्लोम्नो हलीक्ष्णात् पार्श्वाभ्याम् । यच्चं मतस्नभ्यां प्लीहो यकृत्स्ते वि वृहामसि ।
Atharva Veda, II. 6, 2, 3.
क्लोम्नः हृदयसमीपस्थो मांसपिण्डविशेषः क्लोमा..... प्लीहः उदरपार्श्वस्थितात् स्थूलतप्राकाराद् मांसपिंडात् । Sayana Bhashya to above.

From the passage in the Brihad-Aranyaka Upanishad and the Sankara Bhashya thereon it would seem that the word "Kloma" refers to the spleen. But the passage cited from the Atharva Veda would lead us to infer that the "Kloma" is not the spleen, but something else, because we find the "Pliha" also mentioned in the selfsame passage. Sayana says it is a lump of flesh near about the Heart. What it exactly is he does not tell us.

Yours faithfully,
BIMALACHARAN DEB,
Subscriber No. 660.

TO THE EDITOR,
THE JOURNAL OF AYURVEDA, CALCUTTA.

Dear Sir,

With reference to the questions of Mr. D. N. Banerjee in your August issue—

(1) The Tridoshas are organic bodies ; they are matter, existing in the body in different degrees of mobility ; (2) they are replenished from the food we eat ; and (3) they are most certainly used in building up the cells of the body.

I shall try in a later article to prove the above facts and amplify the real nature of the tridoshas.

Yours faithfully,
D. N. RAY.

4, St. James Square,
Calcutta, 11th September, 1929.

THE BRAHMI OF AYURVEDA.

Attention was invited in these columns sometime ago by a correspondent to the confusion often made regarding Brahmi, by which name two different plants are meant by different people. The following lines, it is hoped, will serve to clear up the confusion :—

Hydrocotyle Asiatica belonging to the Natural Order Umbelliferæ is undoubtedly the Brahmi of the Nighantus. It also bears the names of Brahma-manduki and Manduka-parni in Sanskrit. To the ordinary people it is known as Brahmi in Northern India and as Thul-kuri

in Bengal. In Ayurveda the properties of this plant have been discribed as cold, moist, sweet, light and alterative and it has been recommended in loss of memory and understanding, leprosy, jaundice, gonorrhœa, fever, etc. Hydrocotyle found a place in the Pharmacopœia of India and Extra Pharmacopœia and its tonic and alterative properties are now well established. Several European physicians have found a poultice of the herb specially beneficial in syphilitic skin eruptions. The whole plant in fruit is however more efficacious than the leaves only. The fresh plant has an ivy-like odour when crushed and a nauseous bitter taste which are lost on drying. Lepine and the authors of Pharmacographia Indica analysed the plant some years ago. It was found to contain 78 per cent water, besides a white crystalline substance, resin, fat, tannin, gum, sugar, albuminous matter and alkaline sulphates.

Herpestis Monniera, H. B. & K. of the Natural order Scrophulariaceæ has been referred to in Sanskrit medical works as Nir-brahmi or Jala-brahmi. This is perhaps the reason why it is confounded with Hydrocotyle or true Brahmi. It has the special name of Safed-chamni in Hindi, while it is called Brihmi-sak in Bengali. The herb is known as Nir-brahmi both in Marathi and Tamil. According to U. C. Dutt, it is a nervine tonic, useful in insanity, epilepsy and certain kinds of fever. Chemical analysis of the plant reveals two resins, an organic acid, tannin, an alkaloidal principle and trace of an oily matter.

Brahmi and Jala-brahmi are both small plants, creeping on the ground and rooting at the joints. They grow in moist, shady places, but Jala-brahmi, as has been correctly noted by Sanskrit writers, possesses a tendency to be an aquatic. For while Hydrocotyle is often met with at more or less distance from water-side, Herpestis does not grow anywhere but on actual borders of pools of water and resists occasional submergence. Hydrocotyle bears flowers and fruits and attains a luxuriant growth in the rainy season only ; Herpestis, on the other hand, is sure to bear flowers and fruits both during the rains and early winter. Without troubling the readers with the full botanical descriptions of the plants, it will suffice to give the distinguishing characteristics of the two plants which are as follow :—

Parts—	Brahmi	Jala-brahmi
Stem—	Single tufts with long runners, thin	Several at one place, fleshy.
Leaves—	Long-stalked, Kidney-shaped, margin toothed	Without stalk, wedge-shaped, margin entire, minutely dotted.
Flowers—	in umbels from joints, Stalk bearing 3-4 flowers	

N. B. DUTT,
Calcutta.

Reports of Cases

A PECULIAR CASE

(By Kaviraj A. Sham Rao Mudhole.)

Age 30.

Previous history—No Particulars ; good health. One day After 2 P.M. he suddenly complained that he could not see anything, his eyes were all right to look at. He got the eyes examined by Eye-specialists. They remarked that the eyes were all right in all respects. The patient could see darkness and nothing else.

After trying for a month under allopaths, he, being a friend of mine was treated by me as follows :

6 A.M.—2 oz. of Pure Cow's milk (that was first taken from the Cow), with 3 pinches of *maricha* powder.

10 A.M.—Mud Poultices to be applied to the head and to be kept like that for one hour.

2 P.M.—To be applied Bringamalaka Tailam to the head and to be rubbed well.

Diet—Natural food as far as possible.

Avoid—Sexual intercourse

After 20 days, the patient could see things as if in darkness. The treatment was continued for three months more and he is copletely all right.

Cause for the sudden attack of blindness :—

Sexual intercourse in the day time but nothing was found.

A CASE OF NETRA PUSHPA

Previous history—Abhishyanda (Pitta and Sleshma)

Treated by English Doctors.

After 15 days' treatment, a spot on the Black portion was seen. It gradually increased. After one month, Allopaths advised operation only.

Then we have taken up the case.

Treatment—One drop of lime Juice (filtered) to be dropped in the Eye (both morning and evening)

Half an hour after, Nayanamrita was applied.

We have continued the treatment for fifteen days. The patient is completely all right

We asked her to continue Nayanamrita alone to be applied afterwards for a week.

Health and Hygiene

—o—

OXYGEN IS NATURE'S BEST PURIFYING AGENT

Oxygen is the most powerful purifying agent known in nature. An antiseptic, therefore, which contains oxygen in proper proportions is perhaps the safest and most efficient for first aid treatment of cuts, wounds, burns, as well as most effective for use as a mouth wash to destroy the germs which breed in the oral cavity and which produce disease.

The ordinary form of hydrogen-peroxide is not always endorsed by physicians. Often the solution which is offered is too weak to be effective; freqnently it is adulterated, or has an excess of irritating acids or other impurities. Pure, concentrated peroxide which keeps can be purchased, however.

Ask your druggist for the most expensive peroxide—the difference in cost is very slight. Ask him for a peroxide of twelve volumes strength, which is the one usually prescribed by doctors and dentists. This kind of peroxide is sold under its own trade name in original sealed packages. The small additional cost insures a purer and stronger antiseptic.

Breakfast has become an increasingly frequent subject for comment by educators all over the world. Investigations among primary schools as well as among schools for higher education show that almost all the difficult courses come during the morning hours. The reason for this is that the mind is fresher in the morning, more receptive to instruction. The courses which may be studied more leisurely are placed in the afternoon when there is a gradual slackening of energy, and when the mind is less acute.

Similarly, data collected from factories and stores employing large numbers of clerks, offices in which efficiency methods are constantly checked and improved, shows that 70% of the profitable work of the day is performed during four or five hours in the morning. In the afternoon, the same slackening and dwindling of effort is noted, not only among the manual workers and clerical forces, but also, among the heads of the business.

The study of this problem has resulted in urgent suggestions that employees eat more nourishing breakfasts. Whenever recommendations are made as to what food is best fitted to give the energy required to nourish and sustain the body until luncheon, oatmeal almost always appears at the top of the list.

Oatmeal is a natural food. It is well balanced. It contains many of the important elements of nutrition. Oatmeal is a great energy builder, tissue and muscle constructor. It contains the minerals and vitamines, without which health languishes. Oatmeal is quickly assimilated, easily digested and is a natural laxative—a most valuable property.

Not only because of its nutritive properties but because of its extreme economy, oatmeal is included as part of the daily diet by almost all authorities who write or speak upon the subject of health as related to foods. Oatmeal is good for both young and old; it is such an ideal health food that it is frequently recommended in convalescence and practically every mother knows its value as a food for infants.

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FOOT TROUBLES

Cause and Cure

During the course of the day the feet come in for a good deal of work and strain. They have the weight of the body constantly upon them, and there are very few movements of the body in which the feet do not participate. Yet they are gracefully constructed portions of our anatomy that, given a little care, will carry out their duties efficiently and without giving trouble. But when they are neglected and wrongly treated, they may become the site of many ailments that cause worry and discomfort. There are very few people who do not suffer in one way or another with their feet. And practically all such troubles would be avoided if a little thought and attention were devoted to their care, writes Mr. Harry Clements, N.D. D.O. in "Healh For All".

THE BONES OF THE FOOT

The foot is a very clever piece of bone construction. It consists of twenty-six bones which are so arranged and bound up by ligaments and muscles that it has both strengh and flexibility. It resembles somewhat the hand in shape and, also like the hand, it is divided into three parts. These divisions are called the ankle, the instep and the toes. The ankle is made up of seven bones and corresponds to the wrist. Of these the 'oscalsis' forms the heel, and to this bone the strongest tendon in the body is attached. Another bone, the 'astragalus,' supports the lower end of the 'tibia.' These together with the other bones are firmly bound together so that the ankle is able to constanly bear the weight of the body.

THE ARCH

In order to give to the foot the necessary strength, the bones are set in a series of arches, which are formed both lengthwise and cross-wise. The lengthwise arch is sometimes spoken of as being composed of two arches, the inner and the outer. The inner arch is higher than the outer, and at its highest point we find the place most liable to give way under extra pressure. This part is strongly braced with powerful ligaments which give elasticity to the arch. The outer arch is much less elevated and of more solid formation. The lateral or crosswise arches are also intended to give to the foot the maximum of strength and resistance. Later on we shall see how the falling of these arches is a common source of foot troubles.

CARE OF THE FEET

The general care of the feet is an important matter. In the first place, the wearing of shoes must place upon the feet a greater strain than is placed on any other part of the body. As we all know,

boots and shoes must fit fashion rather than the feet, and many foot deformities are due to this fact. In early childhood the wearing of shoes that are ill-fitting may lead to deformity in later life, and so it is obvious that by the exercise of a little care much of this kind of thing might be avoided. There are four points to remember in choosing boots: there should be sufficient width of sole; there should be plenty of room for the toes; the heel should be reasonably low; and there should be elasticity over the instep. These are just common-sense points, yet so few people give them consideration; and, in consequence, they are constantly troubled with corns, bunions, and so on.

A BENEFICIAL FOOT-BATH

The same thing applies to stockings and socks. Unlike any other part of the body feet are tightly covered by material and quite unventilated. Therefore, within reason, the thinner the covering the better. It must be obvious that, in order to compensate the feet for these disadvantages, they should receive a little extra attention. At times when it is possible, and particularly at holiday times a great deal can be done to strengthen and refresh the feet by wearing sandals, either without foot covering or with very thin material. At other times when this practice is out of the question, the foot bath will often restore the sense of well-being to the feet. If a pound of crude Epsom salts are dissolved in the footbath and the feet given a good soaking, the effects will be very gratifying. A vigorous rubbing to follow will add to the benefits.

VALUABLE FOOT EXERCISES

The usual coverings for the feet greatly limit the natural movement of the joints and it is advisable to practise a few exercises to counteract the weakening effects of this The following movements will greatly assist, if they are carefully performed :—

(1) Place a book, about two inches thick, on the floor. Stand on the book, in bare or stockinged feet, with the toes extending over one side of it. Now bend and flex the toes in all directions until the foot is quite tired.

(2) Adopt the position first described, but with the heels overhanging one side of the book. Then raise the heels as high and then as low as possible. Lower the heels as nearly as possible to the floor. Repeat upwards and downwards until tired.

(3) Stand on the floor. Rise on to the balls of the feet; then return the heels to the floor and then, bending the knees, lower the hips as far as possible to the heels. Repeat the movements from four to six times.

(4) Sit on a chair, with the feet set firmly on the floor, about a foot apart. Then keeping the heels tightly on the floor, raise the balls of the feet as high as possible, then stretch the feet outwardly as far as possible, then inwardly Heels to be held firmly on the floor during the movements.

If these exercises are practised occasionally they will keep the feet supple and strengthen the muscles and thus prevent weak feet and fallen arches.

PAINFUL FEET

As in other parts of the body, pain may be the first symptom af a foot complaint. Such a pain may mean some local ailment or it may indicate a constitutional disorder. When the pain is of a burning sensation it may be due to an involvement of the sciatic nerve, and the cause may be found in the lower part of the spine ; or it may be caused by some minor displacement of a bone in the foot. Pain in the heel may also be due to one o those factors. General pain in the feet may be the result of rheumatism, and effective treatment must be directed to the improvement of the general health. There may be pain in the joints of the toes, due to gout. Here again the treatment must be constitutional. Great pain and joint deformities may occur as a result of arthritis deformans. Both local and constitutional methods are needed to relieve this condition, wh ch is always very stubborn.

THE EFFECT OF HIGH-HEELED SHOES

Many foot troubles arise as a result of the wearing of high-heeled shoes. In this way the balance of the body is changed, and an unusual strain is thrown upon the pelvic and lumber parts of the body. The foot suffers in asmuch as it is thrown forward and the toes extended. This tends to weaken the muscles and tendons of the foot and to considerably alter its normal shape. The obvious remedy is to proscribe the use of such heels ; but it may also be necessary to apply active treatment to overcome whatever damage that may have been done. The exercises described will help to reduce the feet to a normal condition, but if the bones have been slightly misplaced, a certain amount of manipulation may be necessary to restore the proper shape of the foot and balance of the body.

FLAT-FOOT

Flat-foot is one of the commonest of foot ailments. It may happen as a result of strain, or it may be due directly to weak muscles. When the muscular system of the body is in good condition, there should be no reason why any part of the body should fail to carry out efficiently its function. This is true in the case of flat-foot. In a great many cases the trouble has started when the condition of the whole system was below par, and, due to a lack of proper care at this time, the foot has never regained its strength and elasticity. Therefore, when there is a general run-down condition accompanying the trouble, the proper treatment sh uld aim at building up the whole of the system. On the other hand there are cases that are due to local condition.

TREATING FLAT FEET

The treatment for flat-foot is obvious. Strengthen the muscles by suitable exercises, and adjust the bony arches by manipulative methods whenever necessary. The exercises and foot bath given earlier in this article will be found most useful in such cases.

In many cases of flat-foot, it is very important to teach the patient the proper way to walk. An ungainly carriage may throw undue strain on the feet. It is also necessary for the patient to be shown how to walk with the feet in a parallel position and not thrown out-wards. Flat feet tend to give a person a very clumsy walk, for normal elasticity and strength are lacking.

BUNIONS

The wearing of pointed-toed shoes, and shoes that are tight-fitting, may press the large toe toward the other toes and in time cause a minor displacement of the big toe joint, If the case is neglected a bunion may develop at this point and cause a great deal of misery. When the case has not been neglected over too long a period, a great deal may be done by osteopathic manipulation and adjustment of the joint. It is also very important, after the trouble has been overcome, that the shoes should be wide-fitting, giving plenty of room to the toes.

ANKLE SPRAIN

The ankle joint is frequently troublesome as a result of strain. Although it is very well endowed with supporting ligaments, its position necessarily subjects it to many shocks and jerks. A sprain of the ankle is a fairly common occurrence, and although this is not a serious affair, unless it is treated with care it may leave a weak ankle as an after result. When there is considerable swelling as a result of the strain, it should be reduced and relieved by means of hot and cold compresses and light massage. As soon as indicated, the joint should be put through its movements by means of gentle manipulations The foot should be watched to see that there are no bony subluxations or dislocations which will prolong the pain and prevent the foot from regaining its normal strength.

THE NEED FOR CARE

A great many troubles of the feet undoubtedly start in early life. There may be some minor weakness that could be readily overcome if a little time and attention were paid to it. Our children may be fitted with shoes which cramp the feet and gradually produce trouble. It is not too much to say that, if due attention were paid to the care of the feet in childhood, nine-tenths of the present foot troubles would never exist.

Reports of Societies, etc.

ACHARIA DHANWANTRI MANDAL, PHAGWARA

(*Kapurthala State.*)

Introduction. Although much remains to be done, still it is a matter of sincere gratification that the generous public and the Press have been of late years, realising their responsibility in encouraging and popularising Ayurvedic method of treatment—father of medicine and surgery. This is a world competition, so the vaids in order to keep their own and secure further patronage should exert their utmost in perfecting their knowledge in all branches, especially surgery, by reading up-to-date books and articles. Realising the dearth of such material for the guidance of Vaids our society has been taking great pains in the matter of Ayurvedic Research and publishing several useful and unique publications in Hindi and Gurmukhi which are highly appreciated by the Professors, Doctors, Vaids as well as lay men. This Mandal was brought into being with the following aims and objects :

1. To popularise Ayurvedic literature and to create a taste among the public for it by distributing small tracts free of charge and arranging magic lantern lectures.
2. To make research contributions on Ayurveda to the Press and arrange publication of up-to-date books-
3. To collect old books in manuscript and stones with inscriptions,
4. To approach the Government, States, District Boards and Municipal Boards for opening and patronising Ayurvedic Pharmacies, Hospitals and Dispensaries.
5. To appoint Research scholars in different branches, especially surgery.

Rules and Regulations

1. Every sympathiser of Ayurveda (gentleman or lady) can enlist as its member.
2. The members shall be classified under two heads.
   (i) those who take part in Research
   (ii) and those who help in the publication of books.
3. Students shall be admitted as members free of any charge while others would have to contribute Rs. 2. as annual subscription for which a regular receipt shall be issued from the office.
4. The working committee of the mandal expects each and every member to honour its publications and help in the wider circulation for the good of the public.
5. Members shall receive grantis small tracts and books costing up to four annas each.

Shiv Sharan Varma.

FIRST ANNUAL REPORT OF THE MUNICIPAL SIDHA DISPENSARY, ERODE ; MADRAS.

The first anniversary of the Municipal Siddha Dispensary, was celebrated on 23-6-1929 in the pandal erected in front of the Government Training School, Erode, adjacent to the dispensary premises under the presidency of Dr. M. Vadivelu Mudaliar, Senior Text Book Compiler, of the Government School of Indian Medicines, Madras. The Chairman Municipal Council, Erode, Municipal Councillors, Government officials, Medical Practitioners of both West and Eastern systems, many mirasdars and merchants of the place were present for the function. The pandal was testefully decorated. The President accompanied by Doctor K. V. Kanniah Naidu, the Assistant lecturer of the Siddha section of the Government School of Indian Medicines, Madras, inspected the dispensary in the morning. The various Bhasmams, sinduiams and other Siddha medicines that are prepared and used in the dispensary were examined by them. There was a large crowd of patients waiting for treatment. Some important patients were shown to them. Some complicated and chronic cases were also examined by them. The doctors appreciated study of cases and adequate treatment given to the poor patients by the physician in charge. At 3 P. M. after light refreshments a prayer was sung in melodious tone by Mr. Krishnamoorthy Ayyar of the Goverment Training School, Erode. The President delivered a lengthy lecture on Siddha system of treatment. Letters and telegrams praying for success for the celebration of the anniversary received from Pandit S S. Anandam of Madras, Doctor Meenakshisundaram, A. K. A. C. of the Salem Municipal Siddha Dispensary and Dr. Kannusamy Pillai of the Municipal Siddha Dispensary, Tiruvanur, were read by the Physician in charge. Doctors M. Vadivelu Mudaliar and K. V. Kanniah Naidu were garlanded. The appended report of the Dispensary was read by the physician in charge. Dr. K. V. Kanniah Naidu in delivering a brief lecture appreciated the valuable work done in the dispensary by the Physician in charge and reqested the chirman and councillors that were present that the requests of the physician be granted immediately to carry out his work in a more efficient manner and added that the employment of a trained nurse will render the dispensary more useful to the females and infant population in the centre which is about 50 per cent of the total attendance at present. Two influential and well-to-do local merchants presented one gold medal each, costing Rs. 110 each and prepared by Messrs. P. Orr and Sons of Madras to Doctor T. G. Ramamoorthy Iyer, the Physician in charge, for having cured a case of Sprue and a case of facial paralysis in their families. Some local gentlemen also eulogised the services of the physician.

The President, Dr. M. Vadivelu Mudaliar, the Chairman, M. R Ry. K. Balasubbarayalu Naidu Garu and Dr. K. V. Kanniah Naidu were garlanded.

The function came to a close at about 8-30. P. M. after giving a hearty vote of thanks to all present.

Erode, 17-9-29. } T. G. RAMAMOORTHY AYYAR, Physician.

THE FIRST ANNUAL REPORT OF THE MUNICIPAL SIDHA DISPENSARY, ERODE.

The Dispensary was sanctioned by the Erode Municipal Council at its Budget Meeting for 1928-29 with a view to encourage Oriental Medicines prepared out of vegetable and other Indian drugs and the Tamil system of treating diseases in Southern India.

2. It was opened on 1-6-1928 by Captain U. Ananthaya, M. B. & C. M. of the Civil Medical Department who was then Head Quarter Medical Officer at Erode.

3. The staff consists of one Physician and two servants.

4. The Municipal Council supplies raw materials out of which all medicines are manufactured in the Dispensary itself.

5. Some important medicines such as Chandamarudham, Panchabanam, Thrivangam, Vangam, Nagam, Thrupashanam, Sadakshara, Agnikumaram, Ayasinduram, etc. were manufactured in the Dispensary during the year. The preparation of these medicines involved a good deal of skill and labour, besides great care, and no pains were spared to get them prepared successfully.

6. Apart from the medicinal treatment given to the patients, minor surgery also is performed here. In such surgical cases, Indian lotions prepared out of Tamarind and Margosa leaves and turmeric are used for cleaning. Oils and ointments, prepared out of bazar drugs, green leaves and roots are applied on. Many cases of Diabetic cellulitis and carbuncles, chronic ulcers and sinuses, necrosis of small bones, whitlows, buboes, boils aad abscess heal very rapidly by use of these lotions and ointments. The dressing of burns is a speciality as the method of ointment treatment is painless, which is published by me in the Journal of Ayurveda for adoption by all medical practitioners.

7. Arrangements are being made to publish now and then the important cases treated in the Dispensary with these medicines in the Journal of Ayurvedha for the benefit of physicians and patients.

8. The statistics of patients treated in the dispensary during the year are given in the table appended to this report which can clearly indicate the usefulness of the dispensary and its popularity. From the

statistics it is also clear that the average cost of medical and surgical aid given to each patient was only 3½ pies per day, as the expenditure on medicines was Rs. 1072 for 52335 patients. The average cost including the establishment charges *i. e* Rs. 1389 was 9 pies per patient per diem. It is therefore evident that this system is very cheap.

9. I think it will not be out of place to record here the work done by the midwives temporarily posted to this institution for a couple of months. The gosha ladies were benefitted by the presence of the midwives who enquired into the minute details of the history of the disease from which they suffered and informed me of the nature of the complaints for which adequate treatment was given and a speedy cure effected. The dressing of female patients and infants was attended to by these midwives. The hospital going poor lady patients were grateful to the charitable disposition of our benign Council and expressed their feelings in the matter on several occasions with their own lips. The existence of a midwife or a nurse in the dispensary like this will be a great boon to the ladies, in as much as it can enable them to reveal the history of the disease which they may feel shy to express to any male member. I regret very much to say that a lady who attends the institution is only able to express her complaints by showing her hands. The diagnois of cases in indigenous system of treatment is based on eight different varieties of examinations. Merely feeling the pulse is intended to be attempted when the disease could not be diagnosed otherwise or when its condition is very bad.

10. From a perusal of the table appended, it will be clear that there is heavy work in the dispensary which fact has been recorded by the officers and Municipal Councillors who visited the dispensary during the course of the year. Copies of the remarks have been submitted to the Chairman.

11. Owing to the growing popularity of the institution and the large number of attendance, it is earnestly requested that additional staff and furniture be sanctioned by the benign council. So far as the staff is concerned, may I venture to submit that a nurse or midwife to attend on lady patients and one servant who can devote his time to the manufacturing of the medicines will be necessary. The deficiency in respect of furniture can be made good by equipping the dispensary with (1) a compounding table, (2) an office Table, (3) a bench, (4) a screen, (5) a large pestle and mortar and (6) an almirah to keep the stock medicines.

12. The increase of attendance in some months was due to prevalence of malaria which subsided at the end of the year. In the months of March and April the Physician was on leave owing to some injury caused to this body by a motor accident. Hence there was a fall in attendance in the dispensary. Again from June forwards the attendance is increasing and now it is about 160 a day.

13. Financial statement :—

From 1st June 1928 to 31st May 1929.

Establishment charges	Rs 1389
Capital cost on equipment	Rs. 469
Cost of medicines	Rs. 1072
Total	Rs. 2930

14 I fervently hope and trust that the Chairman and the benign council will be pleased to consider all aspects of this popular institution, and render all possible help to improve its condition so as to make the same more useful to the public during the course of this year.

T. G. RAMAMURTHI IYER,
Physician.

Erode, 23-6-1929.

TABLE OF ATTENDANCE :

Months.	Adults.		Children.		Total.	Average daily.	Minor Operations.
	Males.	Females.	Males.	Females.			
1928 June	1103	502	371	271	2247	75	15
July	1677	1167	614	585	4043	131	39
August	2499	1627	420	398	4944	160	22
September	2580	1826	503	330	5239	175	33
October	2763	2159	601	393	5916	191	33
November	2902	2059	814	560	6335	212	31
December	2456	1795	778	543	5572	180	14
1929 January	2016	1104	558	502	4180	135	30
February	1530	1079	535	489	3633	130	24
March	1568	1085	692	515	3860	124	8
April	1266	575	484	415	2740	91	Nil.
May	1609	940	628	449	3626	117	43
Total ...	23969	15918	6998	5450	52335	144	295

Total Number of new admissions ...	20844
The Number of patients that attended from outside the municipal limits ...	4067
do from within the municipal limits ...	16777
Total ...	20844

Some of the remarks made in the Visitors' Book of the Municipal Sidha Dispensary, Erode, by the local distinguished Gentlemen :—

The Municipal council and its President are to be congratulated on the keen and sensitive way, in which they have felt their duty to their townsmen by establishing a Tamil and Siddha Vaidhyasala under the able guidance of Vaidhyapathi T. G. Ramamurthi Iyer. The utility of the Institution, and the popularity and the capability of our Doctor are seen in the fact that even with the small preliminary equipment, the hospital is attracting a large number of patients from the various parts of the town, and the attendance is, I am told, daily increasing.

Now it rests with the City fathers to nourish this young child with care and make it more effectively useful, by providing up-to-date equipment of a good Sidha hospital and by appointing a nurse to look to the needs of the women out-patients. This is a very urgent need, as otherwise, the hospital and the Doctorare denied the privilege of being effectively useful to women patients. May the city fathers, and its respected President and the Doctor in charge of the hospital live long and carry on the service, which they are privileged to render to their fellow men.

Sd. A. V. TIAGARAJAN, M. A., L. T.,
Head master, Govt. Training School, Erode.
16-7-1928.

I had occasion to attend the Dispensary continuously for over a fortnight. I am glad to record that the institution is growing in popularity day by day. Patients from the different parts of the town as well as from outside, especially females and children, are visiting the institution in large numbers. The work of the Doctor is much handicapped for want of a female assistant and some surgical instruments. The supply of these wants will, I am sure, add much to its usefulness. The popularity of the institution is due to its able Doctor. Mr. Ramamurthi Iyer.

Sd. V. NARAYANA IYER, RAO SAHIB,
District Forest Officer
(On leave)

Erode
17-7-1928.

I went on a visit to the municipal Sidha Vaidyasala on the morning of the 27th instant. I am glad to mention that I found every thing in good working order and that the institution was attracting quite a large number of patients. It was also evident from a perusal of the statistics that the average number of daily attendance was gradually on the increase. I am sure it is not due to the increase of disease amongst the population but it is only an index of the popularity of the institution and of the Doctor in charge of it, Mr. T. G. Ramamurthi Iyer who is a very talented and good natured physician. I join with my brother

councillors in their observations about the need of this hospital in the matter of furniture and other kinds of equipment. I hope the council will see its way to still further popularise this Vaidyasala and to place it on safe and stable foundations.

Sd. A. SRIKANTA IYER, B. A., B. L.,
30-9-1928. Municipal Councillor.

Brief translation of the remarks of certain Municipal Councillors and Honorary magistrates from the Tamil version :—

Mr. R. A. Subramania Chettyar—Municipal Councillor, writes dated 24-7-28 :

"150 patients attend the dispensary. The popularity of the Institution is due to the Doctor in-charge. The Municipal Council is requested to provide some furniture and staff to cope with the work.

Mr. M. Chikiah Naiker, Honorary Magistrate and President, Panchayat Court, writes—dated 25-7-28 :

I waited in the dispensary for two hours and saw 125 patients attended to at the time. It is worthy to note that within a short period of about 4 or 5 months after opening this new dispensary it has established popularity. The credit is due to the popularity of the Doctor Mr. T. G. Ramamurthi Iyer. The Institution is very useful to most of the female population and children and also to the depressed classes. Surgical work also is done here. The noteworthy feature of the Doctor in charge is that he attends to the depressed classes with great kindness without any distinction of caste. As many females attend the dispensary, it is desirable that a female servant or nurse is employed."

Mr. K. Kadir Sahib—Municipal Councillor, writes, 18 8-1928 :

"The medicines are manufactured in the dispensary itself. The Doctor has got multifarious duties such as examination of patients, attend to the manufacture of medicines, minor Surgical operations, etc. He can be given an assistant. Some patients that attend this dispensary told me that the Doctor is very kind to them and the diseases are cured at a short time by his careful treatment. The Doctor and the dispensary deserves every encouragement."

Mr. R. Vadivel Pandaram, Municipal Councillor, writes on 21-8-28 :

I saw a huge crowd of patients attend the dispensary. When I went to inspect the dispensary I saw 170 names have been registered. The dispensary is very popular. I would like that a permanent building with suitable space may be built for the dispensary.

Mr. K. V. Thandoni Pillai—Honorary Magistate, writes on 8-9-28 :

There is an attendance of 150 to 180 patients a day. The dispensary has become very popular in such a short time as 6 months after it is opened. It is due to the kind treatment of the Doctor and the able treatment given to the patients. Most of the females and children and

the depressed classes resort to the treatment in this dispensary. The dispensary requires some furniture and other equipments very badly.

Mr. C. Muthu Naidu—Municipal Councillor, 13-9-28:

I waited in the dispensary for one hour. Many patients from Tirupur, Coimbatore and other places also come here for treatment. Many villagers from around the town also are treated here. The Doctor attends to his patients very kindly and carefully. The dispensary is so organised that it stands in equal to allopathic Institution. I have seen similar dispensaries in other towns, but none can be compared to this.

Mr. V. M. Mottayappa Mudaliar—Municipal Councillor, 20-9-28:

There is an attendance of between 180 to 200 patients a day. Multifarious work is done in the dispensary. The Doctor attends to the patients without any distinction of caste or creed and he is very kind to every one of them. Some additional servants are necesary to do the various duties.

Mr. K. P. Shanmugam Pillai, Municipal Councillor—3-10-28.

Today's attendance till 5-30 p.m. is 203, all castes and creed attend the dispensary. This is due to the extreme kindness and popularity of the doctor.

Mr. P. V. N. Rangaraju Chettiar—Taluk and District Board member, 5-10-28:—

The doctor is a very able man and at the same time very popular. My sister was suffering from sprue. She was treated by many allopathic and native Physicians but none could cure her and she became worse. Lastly she was left to the care of the doctor in charge of this dispensary. Now she is completely cured under his able treatment. I have decided to present him with a Gold medal.

Visited the dispensary to-day. The building is well ventilated and kept clean. It is rather not spacious enough.

The dispensary was opened on 1-6-28 and the necessity for more furniture was keenly felt, as the patients attending it increased in number from day to day. The average daily attendance which was 75 in the opening went up to 131 next month. In August, it was more than double, the figure being 160: the additional supply of 4 chairs, 4 Benches and 2 Almirahs were recommended by visitors of whom several were Municipal Councillors and one an honorary Magistrate. The doctor will do well to send up an indent for the furniture required with their cost to the chairman, Municipal Council who is at present M. R. Ry K. Balasubbarayalu Naidu Garu, the father of the Institution, and I am sure that the Municipal council, some of whose members had already recorded the requirements, and which has earned the gratitude of the large number of patients

who have till now been succesfully treated here, would have no hesitation to sanction the same.

It is a pleasing feature to note that women resort to this Institution rather freely. The female population and the children population visiting the dispensary is about 54% of the total number of patients. It is a pity that there is no midwife nor woman servant here Having regard to the fact that the dressing of infants and women is better done by women, and that the woman patients would feel less shy to disclose the full history of their complaints (especially those of the private parts) to women than to men, the entertainment of a midwife or nurse or even a woman servant is absolutely essential. It appears that one midwife was temporarily appointed for a couple of months, and then discontinued. The circumstances in which this was done are not known to me : the council will, it is hoped, reconsider the matter and supply the keenly felt want.

The Doctor stands in need of assistance : the Institution is growing in popularity : it attracts patients not only from Karungalpalyam and the main town of Erode, but also surrounding villages. Just while I was in the dispensary a patient from Pariagraharam was treated : a pariah woman with her child was bold enough to approach the very amiable doctor, and he had no scruples whatever to touch the Pariah child and make kind enquiries of its disease. May the Doctor live long and carry on the useful work that he has been doing. His attitude towards the depressed class has been recorded by several of the visitors in this book.

A great deal of the doctor's time is taken up in clerical and menial work. I went to the Institution at 5 minutes to 10, and remained there till over 10-30 a m. Just when I entered the building, there was a large crowd of patients, mostly women and children ; the doctor and the staff were very busy. At about 10-25 a m. the attendance registered was 204 including old cases. He worked from 8 a.m. so that he had to treat in 145 minutes the 204 patients i.e. he spent one minute on an average of 1½ patients. He is a very quick hand in writing. About his general good character, several visitors who are all very respectable gentlemen have made a note of it in this book, and I very heartily endorse the same.

Again there is no library of medical books : it may be required for reference : the doctor uses his own books. He may send an indent for them also to the Municipal Council.

Sd. E N. Venkata Perumel Naidu, B.A.,
Retired Tahsildar and Ex-President, Taluk Board.
Erode, 24-7-29.

Reviews and Notices of Drugs

—:o:—

Amiyabalm, Price Ans. 12. We have to thank Messrs. Deshabandhu Ayurvedic Works, 76, Taltola Lane, Calcutta, for sending us a quantity of Amiyabalm for test purposes. This ointment was made use of in different skin diseases and in wounds, open and bruised, and found to be an excellent antiseptic healing ointment. It is non-irritant and free from mercury or any other injurious drug. Judging from the harmless and soothing nature of the ointment, we can strongly recommend its use in wounds, open and bruised, as also other affections of the skin and epedermis as well as insect bites.

Medical News

—:o:—

CAUSE OF RHEUMATISM

Doctor's belief that removal of tonsils may ward off disease.

"I believe acute rheumatism to be due to a streptococcal infection, often entering the body through diseased tonsils."

So declared Dr. F. John Poynton, lecturing at the Institute of Hygiene, Portland-place, W.

Among children, he said, cases of tonsilitis should be promptly isolated, for tonsilitis spreading might rouse up active rheumatism. If the tonsils were removed it could not be said that the child would never develop rheumatism, but the danger of rheumatic attacks was reduced.

REMARKABLE CLAIMS FOR NEW DRUG

Exreriments by Sir Jagadis Bose.

Sir Jagadis Bose, the Indian scientist, who is famous for his experiments with plants, makes remarkable claims for a drug which he found in a plant in the Himalayas. He says that a poisoned frog was brought back to life by the injection of a few drops of this extract.

Accrording to Sir Jagadis the new drug is not injurious to human tissues, and when applied to patients with cardiac diseases, proved a great success. He claims that the drug causes a permanent revival in cases of heart failure and will revolutionise medicinal practice.

A big step forward may have been made in the task of conquering death.—*British United Press.*

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The Journal of Ayurveda

the Hindu System of Medicine.

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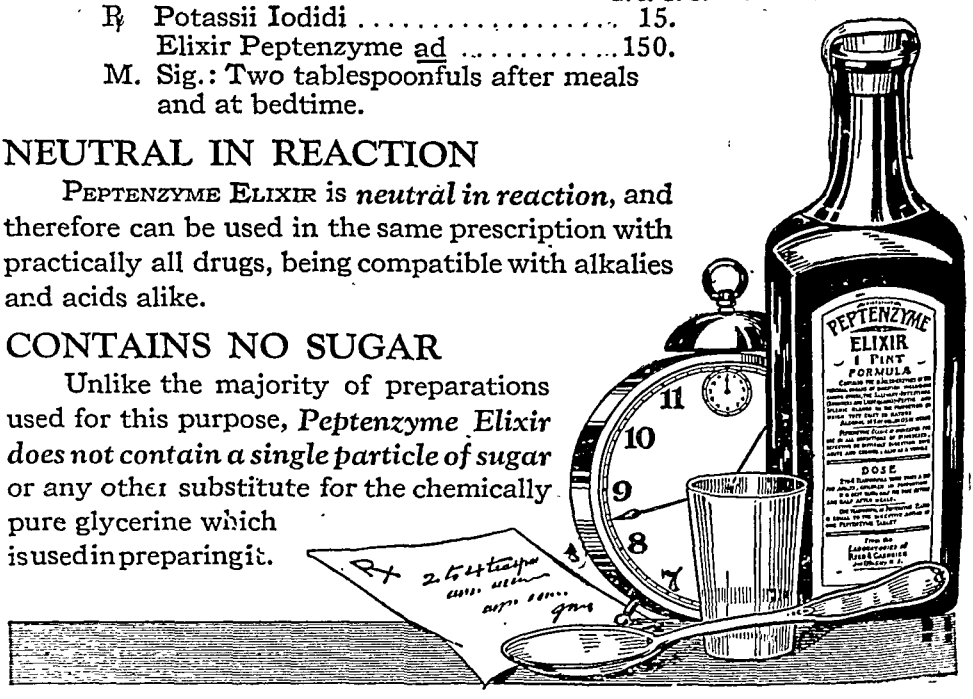

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THE JOURNAL OF AYURVEDA

Vol. VI.] December, 1929. [No. 6.

The Method of Graphic Representation by Aryan Vadiyas

Dr. G. D. APTE. M. B. B. S.—POONA.

The Aryan medicine as handed down to us for ages and the present system of medicine as is being evolved in the new civilised world, are to all apprearances far too apart. The writer is of opinion that things are not what they seem to be and that the ever-growing new system of medicine might in course of evolution one day reach the tenets of Aryan medicine. We should hasten this credit to us by rationlly explaining the apparent awkward passages in the old literature. The poor number of old medical books available to us is a great obstacle ; but the greater obstacle is the extreme indifferent attitude of the Vaidyas towards the great expanse of knowledge available at present. By finding some parallelisms, some jnmp up to the conclusion that the Aryans had all the present intricate mechanical devises at their service. That is an extreme, hasty and unnecessary conclusion as well.

While thinking over the Aryan pathology of diseases, the theory of fevers stands up with a striking semblance to the vews held by the most advanced in the new civilised rational system of to-day. The Aryan medical lexicons have related few mythological stories to technical medical subjects and this fact has been construed by some as a proof of the irrationality of the old writers. A little consideration brings home the wisdom of the old people.

The very soul of present pathology is the theory of Immunity. Almost every book trying to explain this and

such other theories freely gives several diagrams to show how the Amboceptors, Toxophores, Haptophores and Toxins shake hands with each other or ensue a gruesome fight within the human body. None of this can be realised by anything except what are termed the prolongations of mind—power of reasoning, thought, etc. Generally the ideas are pictured on paper as a diagrammatic representation for better understanding. They are evidently no realities anyway. The writers and the readers, though aware of this falsehood, do want it only for a better 'imprint' on the memory centres. Personification or giving the whole series of events a form of a tale better helps this memorising. The much talked of memory-building systems make use of such associations. This method has been very largely resorted to by the ancients in all sciences. We restrict ourselves here only to medicine. Even trying to establish whether or not the myths referred to by the Aryans were facts, one should have no objection to have them in technical books, if they serve the above purpose. Just as diagrams differ in different books, these tales differ in details in different books.

Here we propose to review the tale related to the origin of fevers. The tale in short runs as follows :—

On an occasion of a sacrifice—Yajna, instituted by king Daksha, the God Rudra, the son-in-law of king Daksha and the husband of Prajná one of the daughters of Daksha, was wilfully insulted by not being invited to the ceremony. Out of the consequent wrath, God Rudra produced a demon, called Birabhadra to destroy Daksha's Yajna. The demon ensuing on his mission, everybody got alarmed and by appeasing God Rudra through Visnu, they got Birabhadra to go to the mortal world in the form of fever—Jwara. In view of the above idea of personification this tale opens up the following parallelisms. Before reviewing them, it is worth while to know what the present medicine thinks about fever in general. The consensus of opinion is that fever is a reaction of the body

to 'some' irritating influence. In other words it is the generalised threat of the destructive power in the human body, actuated by the improper conduct of the human body, actuated by the improper conduct of the human economy. One writer has recently used the word 'insult' for this improper conduct. Keeping this in mind and scanning the tale we see the eqalities :—

Daksha—The all-executive power of human economy.

Prajná—The conscience.

Rudra—The destrucive power of human economy.

Yajna—The constant metabolism of human body.

'Insult'—Wilful violation of nature's laws by the executive power of the human body.

Birabhadra—Personified reaction of the destructive power.

Birabhadra threatens with total destruction of the sacrifice. So does fever to the human economy. On several occasions it does not early explain the cause of its invasion. As to realisation of the nature of this Birabhadra we have to limit ourselves to the tenets of Aryan medicine. As above referred, the description varies in different books However, all agree as to two characters —three heads and three feet of Birabhadra. Detailed explanation as to this is but necessary. The impersonal fever invades the human body in three stages, and its course can only be measured in time and not in space. This is quite evident. These three stages are comparable to the three feet of the personified Fever. They are the prodroma, acme and defervescence. Readers might do well here to bring to their minds the tale of king Bali and Baman, the disguised Dwarf God, who traversed the whole universe in three steps—Pátála, Prithwi and Swarga (Hell, Earth and Heaven). Next, the head is the seat for devising mechanisms. So Birabhadra devises his invasion by three heads—The Bàta, Pitta and Kapha, the basic miasmatic trio of the Aryan

medicine, which link the properties of the animal, vegetable and mineral worlds by the same phraseology. The demon is also described by some as having six hands. These could be compared to the six 'juices'—Shararasa, the means through which it creates a havoc in the human body. Then he is also supposed to have nine eyes. That is neither an inapt reference ; because, fever, during its invasion, has in view for destruction the whole human economy, which, according to the tenets of Aryan medicine, is ninefold : Atman (Soul), Satwa (Mind) and the seven Dhátus (material body Tissues). To have all these in view at a glance one may suppose the presence of nine eyes. Other details of the case could be easily explained. The writer does not force on the ancients this idea of suitable reference to the tale. He definitely believes that the authors themselves had this idea when they added that prelude even before the statement about the relation of the fevers to the basic trio of 'Tridosha'. For internal evidence in support of this argument, Charaka—Sharirasthan 5-6, may be referred to wherein Agnivesh has explained to Atreya the human economy as a complete miniature prototype of the universe in toto. It is significant that he definitely refers to Prajápati and Rudra. The commentator has translated the word Parjápati as Daksha. The passage runs as :

यथा खलु ब्राह्मी विभूतिर्लोके तथा पुरुषेऽप्यंतरात्मिकी विभूतिः, ब्रह्मनै विभूतिर्लोके पर्जावतिरात्मनो विभूतिः पुरुषेसत्वम्.....रुद्रो रोषः इत्यादि ।

The writer has compared Daksha in this passage to the all-executive power in the human body. That is neither a forced idea ; because Charaka in Sutrasthana has often compared Atman to a master and the Satwa or Mind or as above depicted Prajápati or Daksha to the executive power in the human body. The Atman or Soul brings the controlling power.

निर्विकारापरस्त्वात्मा सत्वभूतगुणेन्द्रियैः । चैतन्यकारणं नित्यो द्रष्टा पश्यति हि क्रियाः ।

चरक—सू. १—५.५ ।

The passage needs hardly any comment. There are several such other passages.

This idea seems to have been neglected by the present Vaidyas. However, Jayaratna, the intelligent author of a mediæval booklet named *Jwaraparajaya, i.e.* 'Defeat of Fevers' seems to have had grasped the idea. He has extended the same to all different types of fevers known in his time and he designed a picture for every fever. Thus in a moment, it brings to the mind the various characters of the particular fever in question :—onset, intensity, course, complications, etc., and gives a clue to the line of treatment to be followed. The booklet is now out of print and deserves a republication.

So this tale in a nutshell enunciates the general pathology of fevers. On another occasion the tale of Moon, the sensuous, has been very aptly related as a prelude to the aetiology of Consumption. A third instance is in connection with the parasites—"*Luta*"s. In trying to explain this allusion it is quite necessary to discuss the place of 'Bacteriology' in ancient medicine and that forms a subject by itself.

Bacteriology is loosely translated in Indian vernaculars as 'Jantu-shàstra' and that is a misnomer. The old authors have used the word 'Jantu' to denote in general, low forms of life, or man as a spec of life as compared to the whole living world. They, even then, supposed the low forms of life to be the attendants of various diseases (महोपजीवि) and not as the chief causative factors as Westerners make the whole world believe to-day. We hope to take up that subject later.

Indians use the old type of Almanacs and are quite familiar with the pictures of 'Sankrànti' which changes every year. That could be cited as the best example of pictorial representation. Such explanations of mythological tales have been resorted to by eminent persons like Tilak and others, in revealing the most rational secrets of the old writings. The writer is not aware if

there is available, a concise, comparative study of the philosophy of the different medical systems current in the world. It requires an intelligent head and a laborious work, but that will make the advocates of the different systems take a more charitable view of each other. It is a cut-throat game, the Allopaths, Homœopaths and Vaidyas are playing at present; an Allopath deriding a Homœopath, a Homœopath condemning an Allopath and a Vaidya blind to everything, caring for nothing but his own powers of exploiting the lay public.

The writer has tried to explain here only one passage and he means to take up others one after the other. Such piecemeal work is the only way at present to obtain a currect idea of the old writings. The writer would be highly obliged for any spotlights from workers in the field of Aryan medicine.

HORLICK'S MALTED MILK CALENDAR, 1930.

The subject selected by Messrs. Horlick's Malted Milk Company, Ltd, for their 1930 Calendar is the touching incident in the RAMAYANA describing SITA'S insistence on sharing the 14 years' excile of her banished husband, Prince RAMA.

The metrical translation of the verses by Romesh Chunder Dutt is beautifully printed underneath the picture. As the translator tells us :—

"If trial and endurance are a part of a Hindu's ideal of a man's life, devotion and self-abnegation are still more essentially a part of his ideal of a woman's life. Sita holds a place in the hearts of women in India which no other creation of a poet's imagination holds among any other nation on earth. There is not a Hindu woman whose earliest and tenderest recollections do not cling round the story of Sita's sufferings and Sita's faithfulness, told in the nursery, taught in the family circle, remembered and cherished through life. Sita's adventures in a desolate forest and in a hostile prison only represent in an exaggerated form the humbler trials of a woman's life; and Sita's endurance and faithfulness teach her devotion to duty in all trials and troubles of life. "For, said Sita :—

"For my mother often taught me and my father often spake,
That her home the wedded woman doth beside her husband make,
As the shadow to the substance, to her lord is faithful wife,
And she parts not from her consort till she parts with fleeting life!
Therefore bid me seek the jungle and in pathless forests roam,
Where the wild deer freely ranges and the tiger makes his home,
Happier than in father's mansions in the woods will Sita rove,
Waste no thought on home or kindred, nestling in her husband's love!"

The ideal of life was joy and beauty and gladness in ancient Greece; the ideal of life was piety and endurance and devotion in ancient India.',

We would like to see a copy of this Calendar in every home to strengthen and perpetuate that same ideal in modern India.

Original Articles

THE PHYSIOLOGY OF DIGESTION IN AYURVEDA

BY

KABIRAJ D. N. RAY, M. Sc., CALCUTTA.

(This article has been written in consulation with Dr. N. S. Pranjpe, of Yotmol, C. P.)

—:o:—

"दोषधातुमलमूलं हि शरीरम् ।"

सुश्रुत ।

Let us first see what is the real nature of the Doshas. The three Doshas Vayu, Pitta and Kapha are matter and not forces. They exist in the body in different degrees of mobility. They may, in some instances, be invisible, but still they are matter. They exist in the अणु as well as in the महत् state. When in the अणु or molecular state, they are invisible, but still they retain all the properties of the particular Dosha when in the महत् or gross state.

It would be evident from the following passages quoted from Charaka, that the three Doshas Vayu, Pitta and Kapha must be matter and nothing else.

(*a*) "वायुः पित्तं कफश्चोक्तः शारीरदोषसंग्रहः" (च. सू. १)। To describe Vayu, Pitta and Kapha as शारीरदोष is to differentiate them from मानसदोष। Now the body is पञ्चभूतात्मक and as the 'पञ्चभूत's are matter, anything pertaining to the gross body must also be matter,

(*b*) "यत्रान्विताः कर्मगुणाः कारणं समवायि यत्, तद् द्रव्यं"—says Charaka ; and as the Tridoshas have several (out of twenty) गुण's or physical properties attributed to them, they must be द्रव्य or matter. For example, the respective physical properties of Vayu, Pitta and Kapha are given as :

"रूक्षः शीतो लघु सूक्ष्मचलोऽथ विशदः खरः ।"

"सस्नेहमुष्णं तीक्ष्णञ्च द्रवमम्लं सरं कटु ।"

"गुरुशीतमृदुस्निग्ध मधुरस्थिरपिच्छिलाः ।"

(*c*) "त्रिविधं कुक्षौ स्थापयेदवकाशांशमाहारस्याहारमुपयुञ्जानः । तत् यथैकमवकाशांशं सूर्यानामाहारविकाराणामेकं द्रवाणामेकं पुनर्वातपित्तश्लेष्मणाम् ।" च. वि अ. २१

Here we are advised to imagine the stomach to be divided into three parts,—one to be filled up with solid food, the second with liquids, and the third part to be left over for Vayu, Pitta and Kapha. That is to say, the Vayu, Pitta and Kapha are to occupy some space. Now, one of the fundamental general properties of matter is that it must occupy some space. Therefore, Vayu, Pitta and Kapha must also be matter.

Again we are told (च. शा ७) that the normal quantities of Pitta and Kapha in the human body is respectively 4 and 5 Anjali's ;—which also indicates that they are matter.

(*d*) "तत्रोष्णतीक्ष्ण श्लक्ष्ण सूक्ष्मव्यवायिविकाशीन्यौषधानि स्ववीर्येण हृदयमुपेत्य धमनीरनुसृत्य स्थूलाणुस्रोतोभ्यः केवलं शरीरगतं दोषसङ्घातमाग्नेयत्वाद्विष्यन्दयन्ति तैक्ष्ण्याद्विच्छिन्दन्ति ।"

च. कल्प अ. १

Strong drugs, on account of their inherent properties and specially because of their property of heat, break up any 'Dosha-compact' in the body, *liquefy* the Doshas and then by their great active properties scatter them.

In this connection, we have also the term 'प्रवण-भावात्' which can only be refered to matter. Then we have 'लीनं स्वेदस्तु दोषं नयति द्रवत्वम् (च. सि. १) ; भेद liquefies Doshas, and दोषाः स्रवन्ति हि Doshas flow.

The above sentences very clearly show that the Doshas are matter.

(e) "तत्र दोषमेकैकं त्रयस्त्रयो रसा जनयन्ति, त्रयस्त्रयश्चोपमयन्ति ।"
"रसदोषसन्निपाते तु ये रसा यैर्दोषैः समानगुणाः समानगुणभूयिष्ठा वा भवन्ति ते तानभिवर्द्धयन्ति ।" च. वि. अ १ ।

by रस is meant रसाश्रितद्रव्य ।

Three out of the six Rasas produce a particular Dosha and the remaining three mitigate the same. This is the adherent nature (प्रभाव) of the Rasas. When the प्रभाव of an individual Rasa is similar to that of one of the Doshas, it will increase that Dosha. When the Prabhava is opposite, the Rasa will diminish that Dosha. Again, when Doshas and Rasas combine, that Rasa which has similar properties to a particular Dosha, augments that Dosha and vice versa. Now as Rasas are matter, they can, whether singly or in combination, produce nothing but matter. Moreovar, Rasas, whether of the vegetable, animal or mineral kingdom, are organic bodies ; therefore the Doshas must also be organic bodies.

Doshas are described as साम and निराम, meaning that they are found in the unripe as well as in the ripe condition. This also shows that the Doshas are organic bodies.

Having proved that the Doshas are organic bodies, let us next consider the relation between Doshas, Dhatus and malas ; how they are produced in the body and how nourished. (See Charaka, Sutra, ch. 28. विविधाशितपीतीयाध्याय:)

Food is disgested by means of जठराग्नि and in due time nourishes the Dhatus of the body. Food is of four kinds, - (i) अशितं, the main food like rice, etc., (ii) पीतं the liquid food such as water, milk, wine, etc., (iii) लीढ़, the semi-solid food like curry, etc., and (iv) खादितं, the solid food like fruits, etc. These various kinds of food are properly digested by means of the heat evolved out of the respective Agni's ; that is, the solid part is digested by पार्थिवाग्नि, the liquid part by आप्याग्नि, the hot part by तैजसाग्नि, the gaseous part by वायव्याग्नि, and the नाभस part by नाभसाग्नि।

It is the Prana-Vayu situated in the thorax that draws the food from the mouth and brings it into the stomach. There the food is moistened with the *kledaka sleshma* and becomes soft by the action of the स्नेह of the latter. The Samana Vayu from the umbelical region then stirs up and excites the जठराग्नि which now begins to digest the food. The seat of the जठराग्नि is the ग्रहणी नाड़ी (the deodenum) which is situated at the entrance of the intestines and acts as a bolt (वा शा. ६), so that the digested food cannot go to the intestines all on a sudden. The food comes to the stomach from the esophagus, is then received by the ग्रहणी नाड़ी, then after being digested by जाठराग्नि gradually goes to the intestines.

Food contains six Rasas,—मधुराम्ललवणकटुतिक्तकषाय (sweet, sour, salt, bitter, pungent and astringent). The moment the food is taken into the mouth, the digestion of the six Rasas by Agni begins to take place and three विपाक's are produced. At the first stage, in the mouth, out of the मधुरविपाक is produced a फेनभुत Kapha. As the digestion goes on in the stomach and when the food is being squeezed out of it, there is produced the स्वच्छ Pitta. As the digestion of the food still goes on in the intestines, it is dried up by Agni and is converted into a solid mass, and from the कटुविपाक there is produced Vayu.

Cf :—"अन्नस्य भुक्तमात्रस्य षड्रसस्य प्रपाकत: ।
मधुरात् प्राक् कफोद्भावात् फेनभुत उदीर्यते ॥
परन्तु पच्यमानस्य विदग्धस्याम्लभावत: ।
आमाशयाच्चावसानस्य पित्तमच्छमुदीर्यते ॥
पक्वाशयन्तु प्राप्तस्य शोष्यमाणस्य वह्निना ।
परिपिण्डितपक्वस्य वायु स्यात् कटुभावत: ॥" च. चि. अ. १५।

During this process of digestion, the food is first converted into two parts,—one a fine and active material, the प्रसादाख्य रस (food-Rasa); the other a coarse one, the मलाख्य किट्ट (food kitta). The food-Rasa nourishes the seven Dhatus and ओजः of the body. And from the food-kitta are produced स्वेद, मूत्र, पुरीष, वात, पित्त, श्लेष्मा; and कर्णाक्षिनासास्यलोमकूपप्रजननमल, as also केशश्मश्रुलोमनख and other parts of the body.

We should, hewever, always remember that as soon as the food (*i.e.* the six Rasas) comes in contact with the Doshas in the body, it loses its character as such and becomes a Bipaka, *i.e.* a combination of Doshas and Rasas. The food Rasa, therefore, which must come out of the Bipaka is nothing but a crude (or loaded) form of Tridosha.

We have already seen how the मलभूत Vayu, Pitta and Kapha are produced. From the सस्नेहद्रव (greasy liquid) part of the food kitta, again, is produced sweat, from the निस्नेहद्रव (non-greasy liquid) portion is produced urine, and from the निर्द्रव (non-liquid) part the fæces.

We shall now see what part the active food Rasa (प्रसादाख्य रस) plays in the nourishment of the Dhatus of the body. The first body-Dhatu Rasa takes up the food Rasa as its own food and is thereby nourished. The blood takes up Rasa-Dhatu as its food and is nourished by it, and so on. The nourishment of all the Dhatus by the food-Rasa thus goes on continually in a cycle.

"सन्तत्या भोज्यधातुणां परिवृत्तिस्तु चक्रवत्" च. चि. १५।

Not only is the food being digested by the internal agni, but a constant process of digestion is also going on in the Dhatus themselves by means of their own respective Agnis. As time has no break, so also this change of Dhatus from one state to another goes on without break, and without affecting the Dhatu's उष्मा (heat), मारुतः (the व्यान Vayu impelling the Dhatu-nourishing Rasa) and स्रोतः (the channels carrying that nourishment).

The food Rasa also nourishes the five प्रसादसंज्ञक matter, viz. आकाश, वायु, तेजः, जल and भूमि, as also the joints, ligaments, tissues, lymphs and other parts of the body.

In this way, it is the food which maintains the growth, strength, comfort and tone or expression of the whole body.

Let us now describe the process of digestion of the Dhatus by their agnis. As during the digestion of food, two different kinds of matter are produced, so also during the digestion of the Dhatus are produced the प्रसाद part and the मल part.

The first Dhatu Rasa, when being digested, produces an active part which goes to augment the next Dhatu blood, the remaining part is मल of that Dhatu. Thus we get :—

Dhatu.	*Mala.*
Rasa	Kapha.
Blood	Pitta
Flesh	Waste product in eyes, ears, nose, mouth, and in the genital organs.
Fat	Sweat.
Bones	hairs, nails.
Marrow	अचिबिट्
Semen	has no mala.

But from semen is produced गर्भ

According to Sushruta (सू. अ. १४), food when digested is converted to आम-Rasa and Kitta. The Ama-Rasa mixes with the Dhatu-Rasa and is digested by the latter's agni and thereby divided into three parts,—(i) mala part—kapha, (ii) coarse parts,—Dhatu-Rasa, (iii) fine and active part,—blood. This active part mixes with the Dhatu-blood and is digested by the latter's agni and thereby divided into three parts. Thus we finally get the following—

Food	—	food-Rasa and		food-mala.		
Food-Rasa	—	mala kapha ;		Dhatu Rasa ;		Fine Blood.
Fine-Blood	—	„	Pitta ;	„	Blood ;	„ Flesh.
„ Flesh	—	„	waste matter in eyes, ears, nose, etc.	„	Flesh ;	„ Fat.
„ Fat	—	„	Sweat ;	„	Fat ;	„ Bones.
„ Bones	—	„	hairs, nails ;	„	Bones ;	„ Marrow.
„ Marrow	—	„	अचिबिट् ;	„	Marrow ;	„ Semen.
„ Semen	—			„	Semen ;	ओजः

There is no mala of semen.

To recapitulate, the Doshas, Dhatu and malas are being nourished as follows :

Doshas :

Vayu—Nourished by Vayu produced from कटभाव of digesting food in the intestines.

Pitta—Nourished (i) by सच्छ Pitta produced from अन्नभाग of digesting food in the stomach. (ii) by mala of blood.

Kapha—Nourished (i) by फेनभूत Kapha produced from digesting food in the mouth. (ii) by mala of Rasa-Dhatu.

Dhatus :

Rasa	—nourished by प्रसादाख्य रस			from digesting food.
Blood	— ,,	fine blood	,,	Rasa.
Flesh	— ,,	,, flesh	,,	Blood.
Fat	— ,,	,, fat	,,	Flesh.
Bones	— ,,	,, bones	,,	Fat.
Marrow	— ,,	,, marrow	,,	Bone.
Semen	— ,,	,, semen	,,	Marrow.

Malas :

Urine	—nourished by non-greasy liquid part of food-kitta.			
Faeces	— ,,	non-liquid	,,	,,
Sweat	— ,,	(i) greasy liquid	,,	,,
		(ii) mala of Fat.		
Waste matter in eyes, ears, nose, pores, genital organs	,,	mala of Flesh.		
Hairs, nails	— ,,	,, of Bones.		
अक्षिविट	— ,,	,, of Marrow.		

In the case of pregnant females, the food-Rasa is divided into three parts,—one nourishes the womb, the second produces milk in the breast, and the third part is converted into blood. Again, not only is flesh formed out of blood, but the ligaments and arteries are also produced from it. In a similar way, over and above fat, वसा and the six kinds of skin are produced from flesh and स्नायु's are produced from fat.

Cf. रसात् स्तन्यं स्त्रिया रक्तमसृजः कण्डराः शिराः ।
मांसाद्वसा त्वचः षट् च मेदसः स्नायुसम्भवः ॥"

च. चि. अ १५ ।

From the very birth, the Dhatus have a tendency to grow, and this tendency persists up to the 30th year. For the first sixteen years, this growth is not complete. At the completion of the 16th year, all the Dhatus are developed.

Cf. "यथा हि पुष्पमुकुलस्थो गन्धो न शक्यमिहास्तीति वक्तुं नेव नास्तीत्यथवास्ति, सतां भावानामभिव्यक्तिरिति कृत्वा केवलं सौक्ष्म्यान्नाभिव्यज्यते, स एव गन्धो विहतपत्रकेशरे कुसुमे

कालाद्देशाभिव्यक्तिं भिव्यक्तिं गच्छति ; एवं बालानामपि वयः परिणामात् शुक्रस्य प्रादुर्भावो भवति । रोमराज्यादयोऽवार्त्तवादयश्च विशेषा नारीणां रजसि चोपचीयमाने शनैः शनैः स्तनगर्भाशयोन्मुखि-र्वृद्धिं भवति । सु. सू. अ १४ ।

After the 16th year up to the 30th, the fully developed Dhatus, being nourished by food Rasa, grow in quantity. After that, up to the 60th year, the amount of Dhatus in the body remains stationary, and so the body remains in the normal state. After the 60th year up to the 70th, the natural decay of the Dhatus sets in and so after the 70th year man reaches the old age. It is food which keeps up the normal proportions of the Dhatus and malas proper for the particular age of the individual.

Let us now describe how the Rasa-Dhatu is transformed into blood, the blood to flesh and so on. (*Charaka*, चि अ १५).

The तेजः (hot) part of food-Rasa and the heat of Pitta (red-colouring matter of Ranjaka Pitta) impart the red colour to Rasa and it becomes blood.

Cf. "रञ्जितास्तेजसा त्वापः शरीरस्थेन देहिनाम् ।
अव्यापन्नाः प्रसन्नेन रक्तमित्यभिधीयते ॥"
सु. सू. अ. १४ ।

The blood is solidified by तेजः of Vayu and water and also by Dhatu Agni and thus becomes flesh. The flesh in its turn is digested by its own तेजः and due to its property of तेजः and अपः becomes soft and astir and then turns into fat. By its own तेजः the solid, liquid and hot parts of fat are coverted into a compact mass and so we get bones and their brittleness ; and it is Vayu which produces the pores in them. These pores are filled up with the स्नेह of bones and this स्नेह is termed marrow. The स्नेह that is produced from marrow is called semen. The semen oozes out of the pores of the bones just as water comes out of a new earthen vessel. It takes a minimum of one month (मासेन रसो शुक्रो भवति । सु सू. २४) or a maximum of 36 days for Rasa to be converted into semen.

It wil be evident from the above that it is the regulation of heat in the body that plays a very prominent part in converting one Dhatu to another. It is the change of temperature within the cells of the Rasa-Dhatu that transforms it into blood and it is again this subtle change of temperature that imparts the red colour to Rasa.

This change of colour, however, from white of Rasa to red of blood is gradual and takes place by stages. According to

Harita, this occupies a maximnm of 6 days ; there is a change of colour every day, the intermediate colours being white, grey, green yellow, Lotus-red (light red), kingsuka-red (bright red) Lac-red (dark red).

Cf. "रसः सप्तहादर्वाक् परिवर्तमानः श्वेतकपोतहरितहारिद्रपद्म किंशुकालक्तरसप्रख्यायं यथाक्रमं दिवसपरिवर्त्ताद्वर्णपरिवर्तमानः पित्तोष्मोपरागाच्छोणितत्वमापद्यते ।" (हारीत)

The Dhatus, as we have seen, become fixed in quantity after a certain age. They are, as to speak, $\frac{\text{stationary}}{\text{धारक}}$. The Doshas, on the other hand, are $\frac{\text{in-coming}}{\text{अन्तर्मुख}}$ and the malas are $\frac{\text{out-going}}{\text{बहिर्मुख}}$ matter, the porportion between them, of course, remaining constant and normal.

Let us finally see what is the exact relation between the Doshas and Dhatus. The Doshas permeate the whole body, whereas the Dhatus are fixed ; that is to say, the Dhatus must remain in their proper places and flow through their own channels. How are the Dhatus then affected for good or for evil ?

"एतावत्येव दुष्टदोषगतिर्यावत् संस्पर्शनात् शरीरधातुणाम् "

च शा. अ ६ ।

When bad Doshas *touch* the Dhatus, they derange them. And conversely, when good Doshas *touch* the Dhatus, they bring about good results. So long as the Doshas are in actual touch with the Dhatus, just for that length of time only can they affect the latter. And because the Doshas are always in contact with the Dhatus—there being a certain proportion of Doshas in every Dhatu,—the body would be in perfect, health only when the Doshas are kept normal.

Cf "प्रकृति भुतानान्तु खलु वातादीनां फलमारोग्यं, तस्मादेषां प्रकृतिभावे प्रयतितव्यं बुद्धिमद्भिः ।" च. शा. अ ६ ।

How do the healthy Doshas bring about good results,—only by properly nourishing the Dhatus. So after all, it is the Tridoshas and Tridoshas alone that nourish the Dhatus. It is Tridoshas which are parts and parcels of the Dhatus ; it is finally in the Dhatus that they are continually merging. It is the Tridoshas which are component parts and nutrients of the Dhatu-cells, and it is through the Dhatus that the Tridoshas function.

APHRODISIAC REMEDIES IN THE BRIHAT SAMHITA

BY

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(Continued from our last issue)

Mercury should be purified according to eight processes recorded in Indian Chemical books or to avoid all tediousness, mercury should be distilled from Cinnabar by the Damaroo yantra method, which is also held relatively pure to administer.

पथ्या is a favourite drug of our Ayurvedic Rishis. It is recommended in many diseases. Its concentrated administration in certain types of wasting diseases is worth a trial. Its seasonal *prayogas* with differerent anupanas are alterative. It has given rise to this subhashita :—

हरिं हरीतकीं चैव गायत्रीं सततं नरः।
मोक्षारोग्यतपः कामः संस्मरेद्वचयेज्जपेत् ॥

One, who aspires after final beatitude, health, and penance, should respectively meditate upon the god Hari, take Haritaki (T. Chebula), and mutter the Gayatri mantra.

The properties of Shilajatu are highly eulogised by our Rishis.

न सोऽस्ति रोगो भुवि साध्यरूपः शिलाह्वयं यं न जयेत्प्रसह्य।
तत्कालयोगैर्विधिभिः प्रयुक्तं स्वस्थस्य चोर्जां विपुलां ददाति ॥

Cha. Chi. Chap. 1.

"There is no curable disease which will not yield to Shilajatu in judicious combination with other drugs", etc.

"According to Bagbhat, Shilajatu may be purified in milk mixed with a decoction of the three myrobalans and juice of Eclipta Prostrata (Bhringaraj) kept in an iron pot."

Vidang is the best of our anthelmatics विडंगं कृमिघ्नानाम्। Alterative properties have also been ascribed to it.

Honey and ghee are the foremost of our anupans. One thing must be mentioned here that honey and ghee taken in

equal quantities are incompatiable vehicles (anupans) according to Ayurveda. "मधुसर्पिषो समधृते । मधुसर्पिः समधृतं मात्रया तद्विरुध्यते ।" (Charaka).

So, according to this warning, honey and ghee should be taken in unequal quantities in the above-given prescription

क्षीरं शृतं यः कपिकच्छुमूलैः पिबेत्क्षयं स्त्रीषु न सोऽभ्युपैति ।
माषान्पयः सर्पिषि वा विपक्वान् षट्ग्रासमात्रांश्च पयः

He, who takes milk decocted with the roots ...ed in quantity after (Mucuna Pruriens) or eats only six morsels or Mash (Tha Doshas on Radiatus) cooked in milk and ghee together with milk as an anupan, never falls a victim to sexual debility. (4)

[Cf. :—माषाणां पलमेकन्तु संयुक्तं क्षौद्रसर्पिषा ।
अवलिह्य पयः पीत्वा तेन वाजी भवेन्नरः ॥
क्षीरपक्वांस्तु गोधूमानात्मगुप्ताफलैः सह ।
शीतान् घृतयुतान् खादेत् ततः पश्चात्पयः पिबेत् ॥
स्वयंगुप्ते क्षुरकयोः फलचूर्णं सशर्करम् ।
धारोष्णेन नरः पीत्वा पयसा न क्षयं व्रजेत् ॥
स्वयंगुप्ताफलैर्युक्तं माषसूपं पिबेन्नरः ॥

Su, Chi. Chap. 26.

सात्मगुप्ताफलान् क्षीरे गोधूमान् साधितान् हिमान् ।
माषान् वा सघृतक्षौद्रान् खादन् गृष्टिपयोऽनुपः ।
जागर्ति रात्रिं सकलामखिन्नः सेदयन् स्त्रियः ॥

Ashta. Hri Utta Chap. 40.

घृतभृष्टो दुग्धमाषपायसो वृष्य उत्तमः ।

Chakradatta कृष्याधिकार ।

Charaka also gives many prayogas in which kapikachchhu and mash are included, e. g. बीजानात्मगुप्ताया धान्यमाषरसेन च । in the अपत्यकरा षष्टिकादिगुटिका]

विदारिकायाः स्वरसेन चूर्णं मुहुर्मुहुर्भावित शोषितं च ।
शृतेन दुग्धेन सशर्करेण पिबेत्स यस्य प्रमदाः प्रभूताः ॥ ५ ॥

He, who has many wives, should take the powder of Vidarika (Ipomea Digitata) soaked in the juice of the same, rubbed in a stone mortar, and dried repeatedly, with decocted milk and sugar. (5)

[Cf :—चूर्णं विदार्याः सुकृतं स्वरसेनैव भावितम् ।
सर्पिर्मधुयुतं लीढ्वा दश स्त्रीरधिगच्छति ॥

Su, Chi Chap. 26.

चूर्णं विदार्या बहुशः स्वरसेनैव भावितम् ।
क्षौद्रसर्पिर्युतं लीढ्वा प्रमेदाशतमश्नुते ॥

Ashta. Hri. Utta. Chap. 40.

The prayoga originally belongs to Sushruta, from whose Samhita Vagbhatta borrows it with the usual tact of a compiler. Varahamihir is, however, directly or indirectly indebted to both of them, for he, like his predecessor Vagbhatta, has a little improved upon the prayoga.]

धात्रीफलानां स्वरसेन चूर्णं सुभावितं क्षौद्रसिताज्ययुक्तं ।
लीढ्वानुपीत्वा च पयोऽग्निशक्त्या कामं निकामं पुरुषोऽनुसेवेत् ॥ ६ ॥

He, who takes the powder of Amlaki (Phyllanthus Emblica) soaked in its own juice, rubbed in a stone mortar, (and dried) well with honey, ghee, and sugar and drinks milk according to his own power of digestion, enjoys sexual happiness as much as he likes. (6)

[Amlaki is a drug of uncommon repute and high therapeutic efficiency in Pulmonary Phthisis and the chief ingredient in the Chyavan Prasha or Jeevan as it is named by the late lamented Zandu Bhattaji of Jamnagar. आमलकं वयःस्थापनानाम् । Amlaka is the best of all drugs which ward off old age. It is alterative as well as aphrodisiac.

Cf. :—एवमामलकचूर्णं स्वरसेनैव भावितम् ।
शर्करामधुसर्पिर्भिर्युक्तं लीढ्वा पयः पिबेत् ।
एतेन शीतिवर्षोऽपि युवेव परिहृष्यति ॥

Su. Chi. Chap. 26,

कृष्णाधात्रीफलरजः स्वरसेन सुभावितम् ।
शर्करामधुसर्पिर्भिर्लीढ्वा योऽनु पयः पिबेत् ।
स नरोऽशीतिवर्षोऽपि युवेव परिहृष्यति ॥

Ashta. Hri. Utta. Chap. 40.

The prayoga is found intact in all the three versions.]

चीरेण वस्ताण्डयुगा चूर्णेन संप्राव्य कामी बहुशस्तिलान्यः ।
सुशोषितानक्ति पिबेत्पयश्च तस्यायतः किं चटकः करोति ॥ ७ ॥

What is a sparrow before the man (he surpasses the traditional sparrow in sexual vigour) who makes a decoction of the (fresh-cut) testicles of a goat in milk, soaks *tils* repeatedly in this decocted milk, and dries them, taking these tils (seasamum Indicum) together with milk as an anupan ? (7)

Cf. :—भृष्टं माषान् सवस्ताण्डान् साधयेन्माहिषेरसे ॥
भर्जयेत्तं रसं पूतं फलाम्लं नवसर्पिषि ॥
उपस्कलवणं युक्तं धान्यजीरकनागरैः ।
एष हृद्यश्च हृंहणश्च रसोत्तमः ॥

Cha. Chi. Chap. 2.

वस्ताण्डसिद्धे पयसि भावितानसकृत्तिलान् ।
यः खादेत्सशितान् गच्छेत्स स्त्रीशतमपूर्ववत् ॥

Ashta. Hri. Utta. Chap. 40.

वस्ताण्डसिद्धे पयसि भावितानसकृत्तिलान् ।
(शिशुमारवसापक्वाः शण्कुल्यस्तैलिलैः कृताः)
यः खादेत् स नरो गच्छेत् स्त्रीणां शतम् पूर्ववत् ॥

Su. Chi. Chap. 26.

This verse from the Sushruta is also quoted in the Chakradatta with the omission of the second line given here in brackets. Shiva Das Sen explains असकृत् as सप्तधा seven times. Hence बहुशः, मुहुर्मुहुः, etc. may mean the same for the sake of convenience and unambiguity.

Charaka says "शाम्यानूपौदकपिशितानि च मधुतिलगुडपयोमाषमूलकविसैर्विरुद्धान्यन्यैश्च नैकध्यमव्यात्" । Any kind of flesh with honey, til, guda, milk, etc. is a dietetic incompatibility involving serious after effects. Westerners will find that the Rishis of Ayurveda had much knowledge of the incompatibility of several combinations of drugs and even articles of diet. Shiva Das Sen comments upon the verse "यद्यपि उक्तधिकमांसेत्यादिना वस्तमांसस्य क्षीरेण सह विरोधो दर्शितस्तथापि तत्सामान्यवचनम्, इदं पुनरपवादरूपं विशिष्टवस्ताण्डविषयतया न विरोधमावहति ।" As discussed above, flesh with milk is a contra-indication and so must be the case with goat flesh and milk as a general rule. That the flesh of a goat is held to be incompatible with milk in Ayurvedic dietetics is a general statement, admitting exceptions. The testicles of a goat with milk are not contra-indicated, for there is no particular mention of a goat's testicles with milk. Hence milk with the testicles of a goat is an exception to the general rule. Such defences of the words of the Acharyas by commentators are neither uncommon nor infrequent. "अभयाप्रयोगे गुडतैलयोः कुष्ठ निदानत्वेनोक्तयोरपि संयोगमहिम्ना हरीतक्याः समं प्रयोगः कुष्ठहन्ताभवति ।"

"क्षीररसोनयोश्च यद्यपि सहोपयोगो विरुद्धस्तथापि व्याधिमहिम्ना अत महर्षिवचनादविवाद उन्नीयते ।" (चक्रः)

In the prayoga of Abhaya (T. Chebula) recommended by Charaka in the treatment of Leprosy, guda and oil are both

included. Though guda and oil are considered as causative factors along with many others in the etiology of Leprosy, both of them with Chebulic Myrobalans prayoga are not contra-indicated on account of the inherent power of several drug-combinations. In the same vein milk is held incompatible with garlic but owing to the seriousness of the diseases, *e.g.* tumors, sciatica, intermittent fever, heart-disease, abscess, etc, the sincerity with which the Maharshi, Punarvasu speaks these words cannot be questioned.

The rudiments of Endocrinology are also found here and there in Ayurveda. Charaka says नक्ररेतो कृष्याणाम्"—The seminal fluid of a crocodile is the best of aphrodisiacs. He advises elsewhere as follows :—

चटकानां सहंसानां दक्षाणां शिखिनां तथा ।
शिशुमारस्य नक्रस्य भिषक् शुक्राणि संहरेत् ॥

They were, moreover, well aware of the importance of the internal secretion of the testicles to vital force—वैष्णवी शक्ति according to Kaviraj Gana Nath Sen—in our body. Medical experience unambiguously testifies to the unchallengeable Ayurvedic theory that semen is the life of our life ! The paramount need of preserving celebacy for a legitimate period of time and indulging in sexual pleasure sparingly cannot be over-emphasized here.]

माषसूपसहितेन सर्पिषा षष्टिकौदनमदन्ति ये नराः ।
क्षीरमप्यनुपिबन्ति तासु ते शर्वरीषु मदनेन शेरते ॥ ८ ॥

The men, who eat shashtika rice with Masha soup and ghee and take milk after eating them all, share their bed with Cupid at night. (8)

[Cf. :—माषयुषेण यो भुक्त्वा घृताद्यं षष्टिकौदनम् ।
पयः पिबति रात्रिं स कृत्स्नां जागर्ति वेगवान् ॥
Cha. Chi. Chap. 2.

The similarity between both the verses is as clear as it can be easily marked in many quotations. Varahamihir has not only referred to works of Vagbhatta but also to the older Samhitas of Charaka and Sushruta. Those, who implicitly believe that Varahamihir was exclusively indebted to Vagbhatta for the कान्दर्पिक chapter, are wrong.

Sushrata and Vagbhatta mention Masha in aphrodisiac remedies but षष्टिकौदन is not included in any of them.]

तिलाश्वगंधाकपिकच्छुमूलीर्विदारिकाषष्टिकपिष्टयोगः ।
आजेन पिष्टः पयसा घृतेन पक्वा भवेच्छुक्रलिकाऽतिहृष्या ॥ ९ ॥

Til (Seasamum Indicum), Ashwagandha (Withania Somnifera), Kapikachchhu root (Mucuna Pruriens), Vidarika (Ipomœa Digitata), and Shathi rice (curcuma Zedoaria) flour (taken in equal quantities) should be made into a soft mass with goat's milk and cakes prepared from the mass in goat's ghee (taken in a pan upon fire and cakes, when cooked, taken from the ghee-pan either with wooden forceps or with a pointed iron rod in another broad dish). These cakes increase and invigorate the seminal fluid. (9)

[The prayoga of Varahamihir is analogous to the following aphrodisiac cake preparations :—

तिलमाषविदारीणां शालीनां चूर्णमेव वा ।
पौष्कलेक्षुरसेनार्द्रं मर्दितं सैन्धवान्वितम् ॥
वराहमेदसा युक्तां घृतेनोत्कारिकां पिबेत् ।
तां भक्षयित्वा पुरुषो गच्छेत्तु प्रमदाशतम् ॥

Su. Chi. Chap. 26.

Some propose here पचेत् for पिबेत। उत्कारिका रोटिकायाम्। The Indian baked bread, रोटी in Hindi, रोटको in Gujrati, रुटी in Bengali, etc. It also means वड़ि Vadi in the present payoga Vadi is a big pill like Indian preparation, if roughly remarked. For other synonyms, vide वैद्यकशब्दसिन्धु, p. 137.

साक्षात्मगुप्तागोधूमशालिषष्टिकम् ।
शर्करायाः विदार्याश्च चूर्णमिक्षुरकस्य च ॥
संयोज्य मसृणे क्षीरे घृते पूपालिकाः पचेत् ।
पयोऽनुपानास्ताः शीघ्रं कुर्वन्ति हर्षतां परम् ॥

Cha. Chi. Chap. 2.

पूपालिका, पिष्टकविशेषे, पूलिविशेष A cake like preparation. Some scholar explain पूपालिका as पुटला, मालपुवा, वडा, etc. शष्कुली, पिष्टकविशेषे पूलिपिटे। Its preparation is described in Vaidyaka Nighantu from which, verses, describing its preparation, are given on page 1031 in वै. श. सिन्धु. शष्कुली may also mean जलेबी—a ring-like fold preparation of wheat flour. शष्कुली, उत्कारिका and पूपालिका are all cake-like preparations. It is only Indians that can have an adequate idea of all these varieties.]

क्षीरेण वा गोक्षुरकोपयोगं विदारिकाकन्दकभक्षणं वा ।
कुर्वन्न सीदेद्यदि जीर्यतेऽस्य मन्दाग्निता चेदिदमत्र चूर्णम् ॥ १० ॥

Gokshur powder (Tribulus Terrestris) or Vidarikand powder (I. Digitata) should be taken with milk. If this is well digested, he is not sexually debilitated, but if it involves indigestion, the following stomachic powder should be administered. (10)

[Cf. :—फलोन्मुखो गोक्षुरकः समूलक्षायाविशुष्कः सुविचूर्णितांगः ।
सुभावितः स्वेन तस्मान्मात्रां परां प्रासृतिकीं पिबेद्यः ॥
क्षीरेण तेनैव च शालिमशन् जीर्णे भवेत्स द्वितुलोपयोगात् ।
शक्तः सुरूपः सुभगः शतायुः कामी कुकुद्मानिव गोकुलस्थः ॥

Ashta. Hri. Utt. Chap. 39

The following quotations will give the reader some idea of the therapeutic importance the ancient Ayurvedists attached to गोक्षुर and विदारी in sexual debility.

श्वदंष्ट्राया विदायश्वि रसे क्षीरचतुर्गुणे ।
घृताढ्यः साधितो वृष्यो माषषष्टिकपायसः ॥

Cha. Chi. Chap. 2.

विदारीमूलकल्कन्तु घृतेन पयसा नरः ।
उदुम्बरसमं पीत्वा वृद्धोऽपि तरुणायते ॥

Su. Chi. Chap. 26.

श्वदंष्ट्रेक्षुरमाषात्मगुप्तावीजशतावरीः ।
पिषन् क्षीरेण जीर्णोऽपि गच्छति प्रमदाशतम् ॥

Ashta. Hri. Utta Chap. 40.

तद्वद्विदार्यतिबलाबलामधुकवायसीः ।
.....
उपयुंजीत मेधावी वयःस्थैर्यबलप्रदाः ॥

Ibid. Chap. 39.

गोक्षुरकः इक्षुरकः शतमूलीवानरिनागबलातिबलाश्च ।
चूर्णमिदं पयसा निशि पेयं यस्य गृहे प्रमदाशतमस्ति ॥

Chakradatta, वृष्याधिकार ।

Chakradatta has somewhat improved upon the foregoing prayoga of Vagbhatta.

Pedalium Murex is useful as a diuretic while Tribulus Terrestris as a general tonic and aphrodisiac.]

साजमोदलवणा हरीतकी शृंगवेरसहिता च पिप्पली ।
मद्यतक्रतरलोष्णवारिभिश्चूर्णपानमुदराग्निदीपनम् ॥ ११ ॥

Ajmoda (Carum Copticum), Saindhava (Rock salt), Shringaver (Zingiber Officinale), and Pippali (Piper Longum) should be

taken in equal quantities and powdered. Wine, (Asava or Arishta may be substituted) whey, or hot water may be recommended as an anupan, This powder prepation is stomachic. (11)

[The above preparation is analogous to the following stomachic Ayurvedic preparations :—

सिन्धूत्थपथ्यामगधोद्भववह्निचूर्णमुष्णाम्बुना पिबति यः खलु नष्टवह्निः ।
तस्यामिषेण सघृतेन वरं नवान्नं भस्मीभवत्यशनमात्रमिह क्षणेन ॥

Chakradatta, अग्निमान्द्यचिकित्सा ।

लवणयवानीदीप्यककणनागरमुत्तरोत्तरं वृद्धम् ।
सर्वसमांशहरीतकीचूर्णं वैश्वानरः साक्षात् ॥

Ashta Hri. गुल्मचिकित्सा ।

सिंधूत्थपथ्याकणदीप्यकानां चूर्णानि तोयैः पिबतां कवोष्णैः ।
प्रयाति नाशं कफवातजन्मा नाराचनिर्भिन्न इवामयौघः ॥

Ibid.

सैन्धवसमूलमगधाचव्यानलनागरं पथ्या ।
क्रमवृद्धमग्निवृद्धौ वड़वानलनामचूर्णं स्यात् ॥

Bhava Prakash, जठराग्निविकाराधिकार ।

दीपन is stomachic or stimulant to the stomach while पाचन is digestive or that helps the process of digestion.

पचेन्मामं वहिकृद् यद् दीपनं तद्यथा मिसिः ॥
पचत्यामं न वह्निं च कुर्य्यात् यत् तद्धि पाचनम् ॥]

अत्यम्लतिक्तलवणानि कटूनि वाति क्षारशाकबहुलानि च भोजनानि ।
द्रक्च्छुक्रवीर्य्यरहितः स करोत्यनेकान्त्यजाञ् जरन्निव युवाप्यबलामवाप्य ॥ १२ ॥

He, who takes acids, bitters, salts and pungents in excess or food with alkalis and vegetables in abundance, is deprived of his eye sight and semen. Even if he is young, he stoops to a hoard of pretexts as an old man, while going to his wife. (12)

[Cf.—कटुकाम्लोष्णलवणैरतिमात्रोपसेवितैः ।
सौम्यधातुक्षयो दृष्टः क्लैब्यं तदपरं स्मृतम् ॥

Su. Chi. Chap. 26.

कटुकाम्लोष्णलवणैरतिमात्रोपसेवितैः ।
पिताच्छुक्रक्षयो दृष्टः क्लैब्यं तस्मात्प्रजायते ॥

कटुकादिना अतिमात्रेण प्रवृद्धेन पित्तेन शुक्रस्य दग्धत्वात्क्लैब्यं भवति पित्तजमिति द्वितीयम् ।

Bhavprakash, वाजीकरणाधिकार ।

Charaka repeats the same thing in the etiology of Impotence due to [illegible] :—

[illegible]

Cha. Chi. Chap. 30.

[illegible]

Bhaishajya Ratnavali, [illegible]।

[illegible]

Pungents, acids. salts, etc.,when taken in excess, aggravate Pitta and the Pitta thus aggravated consumes the seminal fluid and brings on impotency.

Alkalies are anaphrodisiacs as they depress the sexual capability of a man. Their action is similar to that of aggravated Pitta.

Over-indulging in vegetables is beset with complications of the same type. मितिभुक्, धृतिभुक्, अशाकभुक् सोऽरुक्। One, who eats moderately, patiently, and that too with minimum of vegetables is healthy. In the word अशाकभुक the अ is in the sense of little. (अल्पार्थे)].

CONCLUSION.

When people are squandering much of their money on poisonous patent remedies alleged to impart uninterrupted sexual vigour in a single day, they have very little idea of the evil consequences that inevitably attend their prolonged administration. In this age of nervousness and appalling sexual debility—the curse of our eivilization and licentiousness—the above-given harmless indigenous remedies, cheap in price and sure in effect, will amply repay their trial, if they are continued according to the directions of a physician and particular attention is paid to celibacy, diet, personal hygiene, etc., too numerous to mention here.

In fine, I approach my indulgent readers and critics with this prayer :—

प्रणतिकुसुममालां सर्वविद्वज्जनानां चरणकमलयुग्मेसादरेणार्पयित्वा ।
सदयहृदयवृत्तीन्प्रार्थये तान्प्रतीत्य लघुमतिकृतमेतद्राधवं मे क्षमध्वम् ॥

(The late Mm. Shankerlal Shastri of Morvi.)

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AMMONIUM CHLORIDUM, NH4Cl.

BY

DR. AMRITALAL D. TRIVEDI, L.C.P.S. (BOMB.)

Jam-Raval

—:o:—

SYNONYMS IN VARIOUS VERNACULARS :

San.—Navasar.
Beng.—Nishadal.
Hind.—Noshadar.
Eng.—Ammoni Chloride.

Source.—It is sold in the market and could be easily obtained.

Physical characters.—colourless, inodous, translucent, peculiar fibrous crystals.

Solubility—1 in 3 of cold water. 1 in 60 of alcohol 90 p.c.

Impurities.—Iron, lead, and tarry matters.

Purification of ammonium chloride before medicinal use.—Put ammonium chloride 1lb and 4lb of water in a vessel. Put it on fire. When it melts, pass it through a linen and again put it on fire constantly stirring till water evaporates and clear powder at the bottom remains. Rub this powder in a morter till it is reduced to a fine powder.

Action—Hepatic, stimulant, expectorant, ecbolic, alterative and diaphoretic.

Dose.—6 to 12 raties or 12 to 24 grs.

AYURVEDIC PREPARATIONS :

(1) Purified Navasar—

Dose.—6 to 12 raties or 12 to 24 grs.

(2) Flowers of Navasar.

Directions.—Take ammoni chloride 10 tola and common salt 10 tola. Powder and mix. Put this powder in a crusicle and put a second crusicle over it. Fix the edges of the crusicle by Kapadmati. Put a loaf of fresh cow-dung, so as to keep the upper crusicle cool. Put the whole thing on charcoal fire for 3 hours. When the whole thing cools of its own accord, take out the flowers of Navasar, which are found in the upper crusicle in yellow colour. Collect them carefully and having powdered, bottle it up.

Dose.—6 to 10 raties or 12 to 20 grs.

(3) Raja Vallubha Rasa—Purified ammonium chloride 18, corrected mercury 1, corrected sulphur 3, Plumbago root 1.

Direction :—Powder and mix.

Dose.—6 to 12 raties or 12 to 24 grs.

(4) Shankha Drava.—Take ammonium chloride 1, Pot. Nitras 1, Alum 1, Yavakshar 1. Powder and rub them with lemon juice, till it is prepared into a ball. Prepare two loaves of wheat flour and introduce this ball inside these loaves. Then parch them on an open iron vessel, till it assumes a reddish colour. By parching the loaves, the four ksharas inside become liquid. Make a small hole in the loaves and collect the liquid in a glass-stoppered bottle for medicinal use.

Dose—2 to 5 m.

Anupan—Shunthi kwath or water.

Indications—Colic, chronic congestion of liver, biliousness, jaundice and oxaluria.

PHARMACOLOGY AND THERAPEUTICS.

Externally : Skin—Ammonium Chloride relieves itching and it is used in the form of a lotion (in 10 gr. in 1 oz. strength) in various skin diseases.

It enters into the composition of the cold evaporating lotion, the formula of which is as under :—Spirit Ammonium chloride ½, Spirit Rectified ½, water up to 12. This cold evaporating lotion is also used as a compress to relieve swelling of any part, e.g. penis, scrotum, sprain, bruise, etc. It is combined with potassium nitrite sometimes to increase its therapeutic value.

Internally : Gastrointestinal tract—In medicinal doses, it is a gastrointestinal stimulant. It is an excellent remedy for gastric catarrh. It is used to relieve the vomiting and heart burn due to ulcer stomach. Rajavallubh Rasa or the Shankha Drava is used for this purpose.

Liver—It is a hepatic stimulant and so stimulates the secretion of bile and thus relieves the congestion of liver met with in piles, renal disease, jaundice and dropsy. The Ayurvedic preparation known as Raja Vallubh Rasa or Shankha Drava is selected for these complaints.

Respiratory system—Ammonium chloride when taken in, the stomach reflexly stimulates the respiratory glands. It increases the secretions of the mucous membrane of the respiratory tract and separates the secretion of mucous from the pharynx, larynx and bronchus and hence it is useful in pharyngitis, laryngitis and bronchitis to relieve cough by easy expectoration.

Temperature—It reduces the pyrexia of any origin by diaphoresis and hence it is combined with other diaphoretics to increase the therapeutic value.

Uterus—It is ecbolic and hence it makes the uterus regular in diseases in which it fails to perform its normal function, e.g. Endometritis, Salphingitis, etc. i.e., it makes the menstrual flow regular by relieving the congestion of the uterine mucosa.

Mamary glands—It checks the threatened abscess and pus formation in the mamary glands. For this purpose it is used as a compress of the cold evaporating lotion.

CORRESPONDENCE

—o—

To The Editor,

THE JOURNAL OF AYURVEDA, CALCUTTA.

Sir,

I was rather surprised to read Dr. Ashutosh Roy's rejoinder (*vide* Journal of Ayurveda, Sept. 29) to my letter published in the June 1929 issue of your esteemed Journal, for the still sticks to his previous beliefs, though I have already dealt with all his statements in my previous letter. Before I proceed, however, I would request Dr. Roy not to take my words "settling the account" in an unfriendly spirit. I had absolutely no intention to show any hostile attitude that he has been pleased to interpret. Still, if my words have created any unpleasant situation, I sincerely regret, and assure Dr. Roy that he has misunderstood me.

Dr. Roy believes that at times I very nearly contradict myself and at others I argue in a curious way. It seems that my statements have appeared paradoxical to him, for the immediate points that he has raised in his letter have been fully replied by me (*vide* Journal of Ayurveda, June, '29). This would be demonstrated a little further.

Dr. Roy probbaly considers it my weakness to call the Punjab the original home of the Aryans because of its being my own province. Self-denial may be a virtue, but if, as Dr. Roy says "we seek to find the truth" there is no harm in my assigning to the Punjab what legitimately belongs to it, even if it were my own province. Dr. Roy leaves this question for the residents of the rest of the "Aryavarta" to settle with me. It may be dropped, for it is only a digression from our real subject—the abhorence of beef in Ancient India.

Dr. Roy calls it a curious conclusion to state that Aryans did not feed their childern and invalids on milk, because he stated that they took beef. I had not come to this conclusion from any such statement of Dr. Roy, but from his former statement that they "discovered other uses" of cows which included feeding the invalids, etc. with milk.

Coming to the main question at issue, Dr. Roy states that I cannot deny, neither I did the following :—

1. "That *Go-medha* was performed in India in ancient times."

Indeed I did not deny it, but I denied the epithet of a "Beef-eating Nation" to the Aryans even in the presence of an institution like *Go-medha* by describing a different nature of the performance than the one conceived by Dr. Roy. Would Dr. Roy call the Aryans a tribe of cannibals because there existed an institution known as *Striyalambhana*

in which pregnant women were sacrificed ? If so, why did they not take human or bovine flesh in their daily use ? Why was the use restricted to the petty share of only a drop per head after the *completion* of the *Yajna ?* And the *Yajna* was subject to failures too. It might not be completed in the course of a decade, or it might last for centuries without terminating into a success. A close aquaitance with the *Yajnic* rites is indispensable before venturing to call the Aryans a nation of beef-eaters or cannibals. Dr. Roy would kindly exempt me from a repetition by going through my previous letter, in which I have discussed in detail that the *Yajna* was performed in expectations of certain benefits and was held *Alaukika* (अलौकिक.....विषयत्वात् दर्शदिवत्—*Nyaya Muktavali*), i.e., *above worldly affairs.* All *yajnic* rites had no concern with the daily life, for it was not a part of daily life to kill women, cows, or donkeys. The colossal benefit of the *yajna* along with the liberation of the soul of an animal without causing it the slightest pain (*vide* J. A., June 1929, pp 470-71). In daily life, of course, these things never entered. I have already dealt with this subject in a greater detail in my previous letter.

2. "That Prishadhra practised cow-sacrifice finding that other animals had been scarce."

I have quoted ancient and modern authorities on this passage to the effect—

(i) That this was an exceptional action—never done before.—Chakrapani.

(ii) That all creatures were greatly agonised at this, because they had never seen a cow killed before that.—Chakrapani (1100 A. D.)

(iii) That a disease was inflicted as a punishment upon the king and his followers for this unprecedented crime.—Charaka.

Do the above facts prove that the Aryans were a beef-eating nation ? Was beef-eating in vogue at all in those days, when animals even turned sick at seeing a cow being killed ? Would some future generation call the moderners a nation of murderers, because one amongst us commits a a harrowing murder, thereby frightening the sober and peace-loving people, and the fact is recorded in some books for the future judges of our customs to read ?

3. "That beef was recommended in certain diseases in general prostration and it did not perturb the orthodox religion in any way."

This indeed cannot be denied that the Hindu *Dharma Shastra* permits to take forbidden articles when life is at stake, for human life was held sacred amongst the Aryans. This statement, however, cannot be transferred to beef even, for the abhorrence for this in ancient Hindus was too great to take beef, even to save life. This rule extended to garlic, wine, onion, etc., which were sometimes tolerable, when it was a life and

death question. Even in the recent days I have succeeded in persuading some orthodox people to take *Karpurasava*, *Rasona Vati*, etc., who would not even touch garlic or brandy in state of health or in some tolerable complaint. Would Dr. Roy consider them a sect of habitual drunkards?

Merely for these sparse references which do not prove anything conclusively, Dr. Roy is ready to ignore the overwhelming and conclusive references in the ancient Hindu *Shastras* recording the hatred of ancient Aryans against beef-eating.

As for whether Dr. Roy's views are his own or those of late Dr. Rajendara Lala Mittra, it is all the same to me. Far from having any ill will against Dr. Roy, I have always regarded his work and learning with admiration, and indeed, I should be thankful to him for having an occasion of quoting from his articles in one of my books, *The System of Ayurveda*. If I find myself unable to adopt his one particular view, it is because I sincerely believe in mine. I consider it my duty to bring home to a co-professionalist what I believe to be true.

Sharma Lodge, I have etc.,
Patiala, 15th September, 1929. SHIV SHARMA.

Health and Hygiene

DIET AND DYSPEPSIA

Remorse of a Guilty Stomach

The fact that many avocates of special dietetic schemes are themselves unhealthy must not by itself be taken to prove that these schemes ought to be condemned. Many individuals who adopt this or that diet do so only after their digestion and health have been seriously deranged by long continued dietary indiscretions. Hence having a damaged digestive apparatus, they have to suffer restrictions that would not be imposed on their more robust neighbours. Experience has shown that it is far easier to produce disturbances of the digestive processes than it is to cure such disturbances once they have become firmly established. "Dyspepsia," said a French writer, is the remorse of a guilty stomach." A rigid diet may be an act of penance and may have moral worth, but it will not necessarily wipe out the effects of former physical unrighteousness. Without doubt the digestive system is often treated very badly, and there is little wonder that it sometimes rebels with pain and other evidence of indigestion.

Man has to take food to furnish his body with heat and energy and to form and replenish the bodily frame work. Oxyzen, not less necessary than food, he takes into his body automatically, rhythmically and even unconsciously in the act of breathing. Food on the contrary he has more or less deliberately to select in reference alike to quantity and quality and frequency and dispatch. The range of choice in each of these directions is a very wide one and the opportunities for error are correspondingly numerous. Thus writes a medical man in *Britannia.*

Some klowledge of the elementary facts about food and digestion may help the reader to avoid gross dietetic errors. It must, however, be pointed out that the only practical advice on diet that has universal application to persons in good health is that there is no advice on diet that has universal application. Individuals have food peculiarities even as they have other peculiarities and there is thus a measure of truth in the popular phrase, "One man's meat is another man's poison." It follows that a dietary scheme which professes to be the one proper diet suitable for all persons in all circumstances is based not upon knowledge but upon fancy or imagination or faddism ; and the same influence often leads to exclusions and condemnations of food substances which, in fact, are largely used and with manifest advantage. The amateur and self-appointed law-giver is an active figure in the dietetic world.

THE MEANING OF DIGESTION

Digestion is the name given to a group of processes whereby the complex food substances introduced into the alimentary canal are changed into simpler forms that can pass into the blood and so be transported to all parts of the body as fuel or building material. The body cannot assimilate a ham-sandwich as such ; the ham-sandwich has to be broken down into soluble compounds that can pass into the blood stream as this circulates in the blood vessels in the walls of the stomach and intestine. This essential chemical transformation is effected by the action of special substances manufactured by the various glands connected with the alimentary system and known as digestive juices or enzymes. These enzymes are formed in the several glands and pass thence as secretions into the alimentary canal. The first digestive enzyme the food encounters is contained in the saliva ; it converts starchy food into a kind of sugar called maltose, and mastication promotes this change by securing thorough mixture of the starch. Proteins, which are body-building food components, are broken down into relatively simpler substances called peptones and fats into glycerine and organic acid.

An important agent in promoting digestion in the stomach is the muscular tissue in the wall of the stomach ; this compresses the food and causes it to circulate so that it is thoroughly mixed with the gastric juice.

[illegible] proteins and peptones are converted into aminoacids, [illegible] described as the [illegible] of the body, that is, the material [illegible] to repair waste and to add to its structure; starches, [illegible] and [illegible] are broken down further to simpler [illegible] being used by the body tissues; and still more, fat is [illegible] to glycerine and organic acids. In short, and apart from [illegible] digestion means a series of processes conducted some in the [illegible] some in the stomach and some in the intestine, the purpose being to prepare the food substances for passage into the blood.

The success of these processes depends on the full exposure of the food to the action of the digestive juices. Two agencies facilitate this result. One, mastication, divides and pulps the food so that the digestive juice easily gains access to all parts of it. The other, cooking, has much the same effect, in particular, in starchy foods it bursts the indigestible envelope of cellulose which encloses the starch granules and in animal food it loosens the binding material between the muscle fibres. Thus in each instance effective cooking is an aid to successful digestion, while at the same time, by developing flavour it promotes appetite.

Food which are not digested cannot be absorbed into the blood stream; they are expelled from the body without having contributed to its nutrition. That is, it is not the amount digested and absorbed that has nutritive value. Hurried eating and improper mastication present the food to the digestive juices in a condition unfavourable to the action of these juices. The food, therefore, is not fully digested or absorbed; its nutritive value is partly wasted, and sooner or later the symptoms of indigestion appear.

DIGESTIBLE AND INDIGESTIBLE FOODS

The time required to complete the digestive change varies considerably as between different foods; some are digested quickly, others slowly. Again, the chemical composition of a food is not a complete index of its nutritive value. Many foods—for example, peas, beans and lentils—contain a considerable percentage of protein, even more than beef or mutton, but are not so valuable as foods because they are less digestible; hence they yield only in part to the digestive juices and only in part contribute to body nutrition. These pulse proteins, moreover, are not of such good quality as those of meat, eggs and milk; they lack certain important amino-acids or bricks that the latter contain. In constructing a diet, therefore, not only the quantity, but also the quality of the protein has to be considered.

A food is assumed by some to be digestible merely because it looks digestible. Dyspeptic persons sometimes eat soft starchy foods—rice pudding for example—under the impression that these are "light" and easily digestible. This is an error; soft starchy foods are generally

swallowed so rapidly that they have little chance of achieving adequate admixture with the enzymes in the saliva, and eaten in excessive amounts, they are liable to ferment in the stomach and produce flatulence.

SOME CAUSES OF DYSPEPSIA

The majority of chronic dyspepsias arise out of faulty dietetic habits, for these produce mild but recurrent disturbances of the digestive process. Failure to treat these disturbances, or their incorrect treatment, combined with the persistence of the causative habits, allow them to develop until they have become serious disablements. The prevention of dispepsia involves, therefore, the cultivation of good dietetic habits. Persons who eat their meals at irregular times, and take snacks between meals, who do not masticate their food, whether on account of defective teeth, hurry or simply bad habit, who wash down their food with liquid; who over-eat, who neglect regular and sufficient action of the bowels, are guilty of physiological sins, for which dyspepsia sooner or later is the prescribed penalty.

In addition to unwise food habits there are other causes of dyspectic symptoms. Anything which overstrains the nervous system or which prejudices the general health comes into this category. Indigestion, indeed, may be a consequence of any debilitating influence. Sometimes it means serious disease of the stomach, as for example, cancer or ulceration, and sometimes the underlying cause is gallstones or chronic appendicitis. The moral would seem to be to feed wisely and to maintain good general health as preventive agencies. If in spite of these, indigestion appears, it is time to get expert advice in order to learn whether the cause is a simple or a serious one; while one patient may need a holiday another may require a surgical operation.

COMFORT FOR THE PLAIN MAN

Does all this mean that the ordinary individual must spend his time in calculating food values, in weighing and measuring and adjusting the proportions of the constituents of his diet, before venturing to partake of it? If he did this, he would occupy so much of his time in preserving his health that he would have no time left in which to use it. "The palate," it has been said, "is placed like a dietetic conscience at the entrance gate of food." The plain man would do well to instruct himself in a few general principles of dietetics, so that he may avoid serious errors; but otherwise in relation to any particular food, he should be guided by the answer to the question; "Do I like it, and does it agree with me?"

These judgments of the palate are not infallible, but they are far from being valueless. Indeed, the fact that a food substance is welcomed by the palate is presumptive evidence that it is of value to the body. The art of feeding has its social and aesthetic, as well as its utilitarian aspects.

The dietetic disciplinarian often neglects this consideration, and thus imports gloom where there ought to be gladness. Attractive food is a source of legitimate pleasure ; in addition, by stimulating the appetite and promoting the production of the digestive juices it aids both the digestion and nutrition.

THE INDIAN DIETARY

How to Take Rice and Wheat

Discussing about the correct and harmless Dietary, Mr. Aswini Kumar Biswas, writes in the "National Leader" :—

How can Ata or Rice which is generally the principal diet of a Bengalee—nay an Indian—be well combined with sugar, fruits, and leaves or roots having sweet or acid taste ? I suggest two solutions to the question; the first is to eat the starchy food, whether ata, rice or anything else, in a well toasted brown condition *i.e.* by thoroughly dextrinising the starch, as dextrinised strach combines well with all other articles of food, whether sweet or sour or of any other taste. How is Ata to be dextrinised ? Make fine and thin whole meal bread and bake it on a low fire over a baking pan for such length of time as to make it well brown and crisp. Or first prepare whole-meal bread in the way they are ordinarily made in a Bengali household and then bake it brown again, making it crispy too. This brown and crisp toast or twice baked bread—which is known in the western world simply by the name "Twice bake"—will combine well with all other foods. Rice also is to be well dextrinised, if sour or sweet or both articles of food are to be taken with it. Rice becomes well dextrinised in the form of *Chira-Bhaja i.e.* rice baked and flattened and then baked again with sand ; also the well-known Bengali Muri, Khai, and Chalobaja are dextrinised to some extent. But it is better to bake Muri and Khai again, over a low fire and make it a little brown, before eating them with any acid or sweet food. So we see that rice, in the form mentioned above, can safely be combined with all other articles of food.

The next one is simply to eat non-dextrinised starchy food like boiled rice and ordinary bread etc. with any acid or sweet food. Then another question naturally arises in our mind : should we give up taking non-dextrinised starchy foods altogether or should we stop the use of sweets and sours—especially the wholesome, health-building fruits etc. for the sake of non-dextrinised starch ? But as experience shows, none can be given up for good ; both are necessary for ordinary middle class men of this poor country and it is not always possible to have strachy food well dextrinised. What is the solution then ?

THE SAFE COURSE

The safest and soundest one is simply not to try to take all health-building food articles in one meal, especially if all or some of them are denatured by boiling etc. If boiled rice or ordinary bread is to be eaten, take that with Dal (peas, grams etc.) and cooked and uncooked salad vegetables, which are not sour or sweet in one meal and nothing else. Meat eaters may take some fish or meat with this meal instead of or in addition to (if digestion be strnog) Dal, also fats like butter, ghee or oil may be taken with this meal. And in another meal take all your sweet or sour fruits etc. with milk proteids *i.e.* milk or milk products like cheese, curds, butter-milk etc. ; also some form of dextrinised starch to a very limited quantity may be taken along with this meal if desired. But remember always that raw and pure milk should be used, if not possible, only warmed and not boiled milk or products of su h warmed milk may be used but never the ones ; as boiled milk and its products are indigestible and are not assimilated by the human system

COMBINATIONS

I am again to explain why I have modified my statement by adding "If all or any of them are denatured by boiling etc." By that I mean all articles of food, if they are not denatured by any artificial means, such as cooking—I say artificial, because it is not natural ; in nature no animal other than man prepares his food in that way—can safely be combined with one another. If one takes raw (*i.e.*, unfired) food only, he need not bother himself about combinations ; also raw food is easily digested for it contains its own digestive ferment which is generally destroyed in the process of cooking. We should also keep it in our mind that well combined cooked food or natural raw diet may also cause indigestion, and flatulence if they are eaten to excess *i. e.* taken over and above the natural demands of the body. Some writers have suggested that over-eating of natural food like fruits is not quite possible; but my experience is otherwise. I have got repeated proofs that even fruits, the best natural food for man, can be taken to excess, causing uneasiness in the stomach or intestines. I think the above statement, *viz.* that fruits cannot be over-eaten, is correct to some extent in the case where only one kind of fruit is taken, at one meal and not more ; also no other article of food, —even if they be quite natural like raw vegetables, greens, raw grains and cereals—is taken with the same meal.

RAW STARCH

Raw starch can be eaten with raw fruits and sugar to a very limited extent if well masticated. For instance, we can take raw rice soaked in water, fruits and sugar in the same meal in the form as is generally the custom in Bengal for preparing ablations for the Deities during *Pujas*

(worship). Or we may take raw ata with raw milk, fruits and sugar together as prepared for Satya-narayan Shirni in every Hindu house of Bengal. But we should mind that these combinations, though not strictly correct, are tolerated to a limited extent only because the food stuffs are nearly all raw—having their own digestive ferments intact and not destroyed by cooking. We should also see that cooked starchy grains and vegetables which are not dextrinised (cooked non-starchy vegetables and dextrinised starch being exceptions) be not taken along with these combinations and it is well insalivated and never eaten to excess.

FOOD FOR CONVALESCENTS

Let us see how then bread and milk and sugar are generally and invariably prescribed by doctors for the convalescent. The answer in plain language is that owing to ignorance of the science of food combination, the doctors of our country prescribe such a wrong food. The same remark applies to the prescription of lime-juice with water at the end of a starchy (non-dextrinised of course) meal. Though well-known doctors and dietitians of Europe and America have verified the science of food-combination in many ways and have published authoritative books on the subject, our doctors here know very little about them and hence the wrong dietetic prescriptions. The said prescriptions would have been correct as to combination, if only dextrinised bread were given instead of bread simply. But even then it would have been otherwise faulty, for only concentrated articles of food which leave very little or no residue are prescribed and no food to supply the bulk or cellulose, which is essential to help the natural moving of the bowels. Some fruits containing cellulose (like Raisins, Dates, Papaws, Mangoes, etc. in their entirety and not the strained juice or the kernel without the cellulose portion) or non-starchy vegetables, which generally contain sufficient cellulose should have been added to the above menu ; otherwise it will tend to constipation, for it has been found by repeated experiments by well known doctors that human intestines are so constructed that they require some such almost indigestible bulk for a regular motion.

SPREAD OF CHOLERA

—:o:—

Is it Man-Borne or Water-Borne?

(By Dr. Sundari Mohan Das).

The newspaper reviews of Dr. Bentley's broadcast lecture carry an impression that Cholera is man-borne and not water-borne. I think nothing was further from the intention of a distinguished sanitarain like

Dr. Bentley than minimizing the water-borne theory. He simply tried to emphasize the importance of fortifying the body of man by anti-cholera inoculation. The scientific world still stick to the water-borne theory. Dr. Bentley is of opinion that as dirty water, whether in the unfiltered water supply or in tanks and wells, cannot be done away with at a stroke of the pen or by a fiat from the Corporation Council, our energy should be directed from the vehicle to the host *viz.* man who should be protected against the attack of the invisible foe. Ward XX Health Association, located in the Chittaranjan Hospital, has already taken up the work of inoculation in right earnest and, I hope, others will follow suit.

COMMA BACILLI AS CAUSATIVE FACTOR

I had the proud privilege of having been associated with the investigation of comma bacilli as a causative factor in the spread of Cholera made by Dr. Simpson and Prof. Haffkine. 582 specimens were taken from the affected localities from tanks, wells, river Hooghly, canals, bathing platforms, street hydrants, milk markets and vendors, foodstalls, and air in infected houses. Out of 46 tanks around which cholera existed, commas were found in 42, *i.e.* 91.3 per cent. In the Chitpore Canal commas were found in 5 specimens out of 18 *i.e* about 28 per cent. Duirng the *Ardhodaya Yoga* outbreak, commas were found in the Tolly's Nullah, and even in Kali's Charanamrita. From these facts it is quite clear that the water-borne character of Cholera must not be lost sight of. The Corporation analyst's report about the purity of the Calcutta filtered water is not much reassuring. He says : "Of late years appearance of foreign matter in the water has become of rather frequent occurrence. Almost every year during the last 4 or 5 years and the dry months, *i.e.*, April, May and June, this "accident" takes place. He cites the instances of sewage contamination in Chhatawala Gulle (twice) leading to disastrous results, and in Ganguly Lane at the junction of Chowringhee and Lower Circular Road.

CHLORINATTON

Neither is the Health Officer's note on the condition of the new 60" mains from Pulta to Talla and the result of Chlorination so very encouraging. On the 17th April, 1929, the water from the new filters was collected at Chamber A, and there treated with Electrolytic bleach. It was then pumped into the 60" mains. Samples of water were collected from the different washouts viz. Barrackpur, Titaghur, Khardah and Dantiakhal on the 18th and 19th April. The sample collected from Talla showed the presence of faecal organisms in such a minute quantity as 1/1000 c.c. On the 26th, water from the clean reservoir showed the same result.

So the promised increase of filtered water is not likely to lead us to the *Promised Land.* Neither is chlorination devoid of risk. Is the

presence of iron contained in the filtered water sediment due to any corroding action of Chlorine on the iron mains ? It is not time to announce the effect of chlorination on the Cholera epidemic ? If the course of the disease is not arrested, had not the rate-payers better resort to the time-honoured method of boiling their water during epidemics ?

DWELLING OF COMMA BACILLUS

Dr. Bentley says that comma bacillus can grow in human intestine only. I would like to draw his attention to the fact that Dr. Simpson and Prof. Haffkine discovered COMMA in hosts other than man. Frequent coincidence of outbreaks of cholera with diarrhoeal disease in cattle led Prof Haffkine and Dr. Simpson to examine cows suffering from diarrhoea simultaneously with men attacked with cholera in different parts of Calcutta and Howrah. COMMA BACILLUS was found in the stools of cows that were ill and in the intestines of those that died. COMMAS were found also in the cesspools connected with the cowsheds. But mammals do not seem to be the only host. Some "*Singhee*" fish brought from Jessore to the laboratory showed some spots supposed to be small-pox eruptions. Dr. Simpson, after a careful examination, found COMMA BACILLUS of a most virulent type in the intestine of that fish. That was in 1894. It behoves research scholars with their modern appliances to carry on research in this line.

In conclusion I again insist on house-to-house inspection by Ward Health Association workers and the Health Department, the early training of living cases, notification, isolation, disinfection and inoculation. I would also urge on the Health Committe to pay Rs 2/- for each information and Re 1/- for each inoculaton to the medical practitioners.

RAVAGES OF INFLUENZA

Need of a World-Wide Organisation

A correspondent has contributed an illuminating article on "Influenza" to "The Daily Express" in the mail week. He describes at length the great havoc it created in London last winter and complains that there is no regular organisation anywhere in the world to combat tthis world pestilence. In the course of that article he says :—

"Well, I want to know how long we all propose to take this plague lying down. It is a world-pestilence but there is no world organisation engaged in war against it. The whole resources of international medical science should have been mobilised many years ago in order to discover the cause of influenza and the remedy against it.

But the plain truth is that scientific research in this field is disgracefully neglected by all civilised nations. Enormous sums of money have been lavished (and wasted) on research work in connection with spectacular diseases such as cancer, but there has been no adequate endowment for research work in connection with influenza. The influenza germ or germs could be detected if funds were raised for the bacteriological detectives. But the world is mean.

These undiscovered micro-organisms are ultra- microscopic. It has been proved that they are filter-passers. There is no knowledge of their nature. Medical science is absolutely bankrupt so far as influenza is concerned. It can neither prevent it, nor moderate it, nor protect its victims against its consequences.

If the Government were to proclaim war to the death against influenza and were to provide in the next Budget a war chest to finance the research war it would secure the votes of every influenza-ravaged household. There is not one voter whose life and health are not imperilled during each influenza epidemic. And for every influenza death there are hundreds of thousands of influenza shattered lives.

POST-INFLUENZA DEATH

A great doctor tells me that during the next six months the mortality aftermath of the epidemic will be incalculable. Nobody will know or notice it. The post-influenza deaths will not be recorded in the statistics.

My own view is that the gravity of the recent epidemic has been utterly under-estimated. The figures are appalling. In 1928, during January, February, and March, in England and Wales 1,467 persons died from influenza. In 1929, during those montns, 12,711 persons died.

The death-roll in London for the the first three months of 1928 was only 242. This year it was 1,467.

But these figures convey less than nothing and mean less than nothing. They do not reveal the mortality assigned to pneumonia, and all the other diseases arising out of influenza or made fatal by it. Influenza is not credited with a tithe of its victims

It is almost impossible to find any body who has not been attacked by influenza once, twice, or three times during the winter. The pestilence has been uniserval. I know families that have been devastated by it several times. We catch it from each other. We recover. We catch it again. It is a vicious circle.

A TYPICAL EXAMPLE

Here is a typical example. In a nursing home near London influenza appeared. The matron died. All the nurses died. All the patients died except three. These three were removed, and the nursing home was closed.

Many nurses refused to nurse influenza cases at all. This may seem to be an incredible statement, but I can vouch for its accuracy. The reason is tragic. Too many nurses died and too many doctors, because there is no known preventive or curative measure against pneumonic influenza. Physical fitness is no armour. A giant is at the mercy of these mysterious germs. And medical science is impotent.

A sneeze is like a machine-gun traversing its front. Experiments have proved that plates fifteen feet from the sneezing person were sprayed with the deadly invisible microbes. Cultures made from the plates slew animals.

Yet influenza is not a notifiable disease. It is not isolated. Its nests are not fumigated and disinfected. We all gregariously infect each other in houses, workshops, offices, hotels, churches, theatres, cinemas, ships, trains, trams, omnibuses, and crowds.

I will vote for the Government if they make war against influenza a front plank in their platform."

"SUPER-MEDICINE"

A super race of mental and physical giants will be developed through the use of "supermedicine," the foundation of which has already been laid This is a statement made by Dr. Oscar Riddle, of the Carnegie Institution's experimental station, to members of the American Philosophical Society at Philadelphia.

Experiments conducted with "supermedicine" in its crude stage have already developed animals to twice their normal size and changed the sex in birds, frogs, and other animals

Brought to a logical conclusion, Dr. Riddle predicted that the experiment would mean the development of a better human race.

Reviews and Notices of Drugs

:o:

Every pain is the result of a disturbance in the physical or mental equilibrium, an interruption of some vital function, a deviation from the normal. Injuries, inflammations, excessive muscular strain, disturbances of the circulation, all are productive of pain. And be it trivial or severe, prolonged or ephemeral, uppermost in the mind of the patient is the prompt suppression of that pain.

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News & Notes

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THE GITA EXHIBITION

In view of the Gita Exhibition to be held, under the presidency of Pandit Madan Mohan Malaviya on the occasion of Sri Gita-Jnana-Yajna during the Magh Mela at the Sacred Sangam Allahabad, the collection work is in progress. Apart from the collections of the Gita library at Calcutta, a schedule whereof is appended to the Gitank of the Kalyan of Gorakhpur (page 455 to 500), a large number of other rare exhibits, pictures, paintings and printed and manuscript Gitaic literature in diverse characters and languages, both Indian and foreign, will also be displayed.

Those interested in Gita—libraries and booksellers in particular—are requested to kindly send in time their pictures, paintings or literature on Gita and to communicate to us the sources we should approach for such material for the intended Exhibition.

Information on the following points is particulary requested :—

(1) Any literature on Gita printed or in manuscripts in any characters and languages which is not included in the list of Gita library of Calcutta appended to the Gitank of the 'Kalyan' page 455 to 500.

(2) Any picture or painting depicting any of the ideas or characters of Gita.

(3) Pictures and photos of writers, translators and commentators on Gita.

(4) Other Gitas besides the popular Srimad-Bhagavad-Gita such as Ram Gita, Asthavakra Gita, etc.

(5) The addresses and reports of the institutions which propagate Gita.

(6) The places and institutions where the Gita anniversary is celebrated.

In cases of such literary material as cannot, for any consideration, be sent in to the exhibition, its full particulars may be supplied to enable us to include the same in the general list to be displayed on the occasion.

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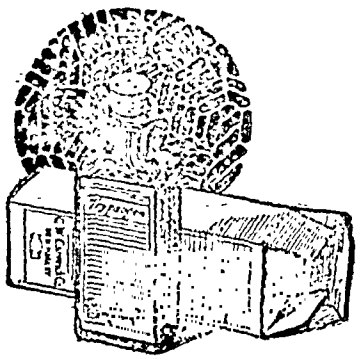

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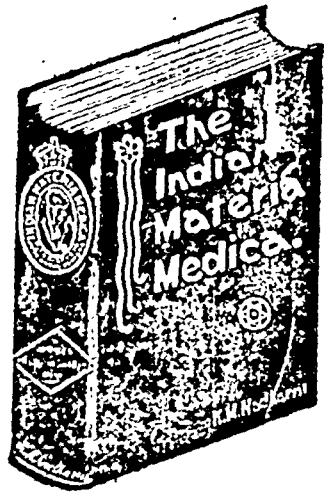

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The Journal of Ayurveda

or the Hindu System of Medicine.

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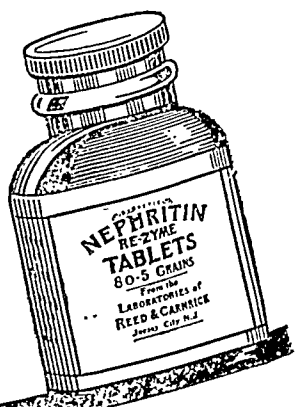

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THE JOURNAL OF AYURVEDA

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Necessity of Introducing Western Surgery in Ayurveda

C. G. MAHADEVIA, M.B., B.S. (UNA.)

Medical Sciences are progressing ahead in the West. There was a time when East was leading the world in all Sciences. Let us bring back the day when India will lead the world. I have no desire to build castles in the air. As one interested in Surgery, I dream that Indian surgeons will lead the surgery of the world in near future.

As a first step to above, Ayurvedic Practitioners should be taught latest Surgery. Surgery is one of the important branches in Allopathy while it is unfortunately too much neglected by the Ayurveda-teaching institutions. There cannot be water-tight compartments between the two systems of medicine. Both aim at alleviating human suffering as best as possible. If at al lthere is a difference, it is as regards the Causation of Diseases. What is really good in one must be assimilated by the other. Surgery at present is practically monopolised by those who receive their training in medical colleges and schools teaching medicine on Western lines. Several Ayurvedic teaching institutions have kept surgery as one of the subjects they teach in their syllabus. Probably the subject is not taught as efficiently as in the other institutions. The reasons may be lack of facilities for this sort of training. But according to the maxim, where there is will there is way, facilities will be forthcoming if the will—strong will, exists for the same in the organisers of these institutions. Efficient Surgeons, preferably Indian Surgeons of eminence, should be invited to take charge of Surgical wards of Hospitals attached to these institutions. These

surgeons should have strong ambitions to see that Ayurveda should be a progressive science and that latest surgery must be taught to Ayurvedic practitioners and students as it is taught in the sister institutions teaching Western Medicine. These surgeons should be prepared to severe their connections from the Provincial Medical Council Registers if they are required to do so. These medical councils should count for nothing if they insult Ayurveda, the oldest system of medicine. My conceptions of Ayurveda need clearance. I am proud of it as an Indian Science of Medicine—the oldest of its kind. I am proud of it as it is founded by ancient Rishis who without the help of the innumerable modern apparatuses succeeded in building a system of medicine which still survives, despite organised attempts by the interested foreign Government to crush it. But I refuse to make Ayurveda stagnant. It must incorporate in itself what is best in the other sister sciences. One added to one should make two in any part of the world. Human bodies are structurally and functionally alike in East as in West. The Surgery of West owes its progress to study of Anatomy and the discovery of Antisepsis and Asepsis. The Ayurvedic institutions should have facilities to teach Anatomy very thoroughly. Antisepsis and Asepsis are the outcome of the Surgical Bacteriology.

Text books should be forthcoming in vernacular to teach Surgery. Technical words coined from Sanskrit should be used. Surgery like other technical subjects cannot be learnt from the perusal of books only. The common operations should be demonstrated to students on dead bodies in dissection halls and all students should have access to the operation theatres of fully furnished hospitals under charge of capable Surgeons.

I invite criticism on the subject from leading Ayurvedic Physicians, especially those in charge of Ayurvedic schools and Colleges.

———

Original Articles

COBRA BITE

BY

T. G. RAMAMURTHI IYER,

Physician, Municipal Siddha Dispensary,
Erode, (Madras Presidency).

:o:

In India in the case of venomous bites it has been the practice from time immemorial for people largely to resort to *mantras* and to indigenous antidotes. In those days each village was self-contained and had in it among others, *mantrikas* and specialists in such treatment, and thus help was always at hand. But now such mantrikas and specialists have become rare. A few of them, the descendants of the famous men, live in far off places and their help cannot be had in time. As for the Allopathic institutions, which are also far off from most villages, they render only first-aid, viz. tie a cord above the seat of bite, incise the seat of bitten part and rub Pot-Permang. crystals in it. The anti-toxins for these bites cannot be kept in stock in the moffusils as they deteriorate if not preserved in special chambers. They are to get such anti-toxins from distant laboratories and this generally takes a few days and the patient may not survive till then. If, at all, the patient survives to receive the dose of anti-venomous serum, it is not certain that the dose administered is sufficient to counteract the poison injected by the Cobra, as no metre has been invented yet by modern scientists to estimate the quantity of the poison entered into the system. The above remarks of mine are subject to correction. Except the slow pulse nothing could be traced and the heart failure is sudden. The Parel laboratory incident will be yet fresh in the minds of most of us. When all the external signs of failing life such as coma, cold feet, etc. have appeared how far the anti-venomous serum will be helpfnl is yet to be decided. Thus in the numerous cases of snake bites many a life that could be saved is allowed to pass away for want of timely help.

The drugs used in the above antidote :—

Sanskrit.	English.	Tamil.	Quantity
Haritaki	Terminalia chebulia	Kadukai	1 part
Sarshapa	Mustard	Kadugu	"
Saindava lavana	Rock Salt	Induppu	"
Hingu	Asafoetida	Perungayam	"
Tankana	Borax	Vengaram	"
Parada	Mercury	Rasam.	"
Manahsila	Red Arsenic	Manosilai	"
Pippali	Long pepper	Tippali	"
Haritala	Yellow Arsenic	Talagam	"
	Nigella Sativa	Karunjeerakam	"
Vatsanabha	Aconite	Nabi	"
	Black Hellebore	Kadugurohini	"
Jayapala	Croton seeds	Nirvalam	12 parts
	Cocoanut shell burnt Charcoal	Sirallaikari	5 parts.
	Palmyra, Jaggery,	Karpuatti	5 parts
	Daemia Extensa-Juice	Valiparuthi-Juice	q. s.
	Lemon Juice	Elumichan	for one hour
	Cocoanut rind juice	Thangaipal	Grinding each.

I have got another preparation ready now, prepared according to this formula of the great sages of the past and was in use by eminent men for a long time for which they claim the greatest and speediest effect. I shall try this medicine as occasion arises and shall publish the results through your esteemed Journal.

How can these medicines be administered when the patient is in an unconscious state and the jaws are locked ? They connot be injected either by the intravenous or muscular methods. In such conditions the top of the head should be incised for about half an inch long, scalp deep, and the medicine about ten grains should be rubbed in, apart from applying to the seat of bite and the eyes. When the body is cold, an earthen pot containing live charcoal is placed on the head for a few minutes to stimulate the action. For moderners this may seem crude. The high potency of the medicine, the cheapness of the drugs and the accessories speak volumes in favour of this. These medicines should become popular and should be within the reach of every one. Life is precious. Whatever be the medicine, its curative effect is the only criterion. These very medicines are suggested in snake bites even of lower animals.

THE CARE OF INFANCY AND DISEASES OF CHILDHOOD IN AYURVEDA

BY

BHISHAGWARA V. SUBBA RAO, A. M. A. C.,

Associate of the Madras Ayurvedic College.

V. TREATMENT

Hints on treating Children—

1. यदित्वातुर्यंकिंचित्कुमारमागच्छेत तत्प्रकृतिनिमित्तपूर्वरूपलिङ्गौपश्यविशेषैस्तत्वतोऽनुबुध्या सर्वविशेषानातुरौषधदेशकालाश्रयानवेक्षमाणश्चिकित्सितुमारभेतैनं मधुरद्रुदुलखसुरभिशीतशङ्करं कर्मप्रवृत्तयन् ऐवंसात्म्याहिकुमारभवन्ति। तथातेशर्मलभन्तेऽचिरायारोगैष्वरोगवृत्तमातिष्ठेत् देशकालात्मगुणविपर्ययेन वर्तमानः क्रमेणसात्म्यानि परिवर्त्योपयुक्तानः सर्वाण्यहितानि वर्जयेत्।

Charaka, Sareera.

2. निवृत्तिर्वमनादीनांमृदुत्वपरतंत्रतां
वाक्येष्ठयोरसामर्थ्यंवीक्ष्यबालेषुशस्त्रवित्
भेषजंचाल्पमात्रंतुयथाव्याधिप्रयोजयेत्
मधुराणिकषायाणिक्षीरवन्तिमृदूनिच
प्रयोजयेद्भिषग्बालेमतिमानः प्रमाततः
अव्यर्थस्निग्धरूक्षोष्णमम्लंकटुविपाकिच
गुरुचौषधपानान्नमेतद्बालेषुगर्हितं
समासात्सर्वरोगाणामेतद्बालेषुभेषजं
निधीष्ठंशास्त्रविध्वेध्यः प्रविविच्यप्रयोजयेत्

1. If any disease comes to the child, then carefully examining it by the fivefold considerations of nature, inducing causes, premonitory indications, developed symptoms and treatment, and attending also to the special circumstances connected with the patient, Drugs, Place (Desa) and time (Kala), the learned physician should set himself to the treatment, using medicines consisting of those that are sweet, mild, light, agreeable to the scent and cool, since these are well suited to infants and children. It is by this means that children recover very soon. When the child is ill, measures should be taken for curing that illness. And as regards that child which is brought up in practices that are opposed to

desa (place), kala (time), and prakriti (constitution), the physician should cause those practices to be gradually altered and replaced by those that are really suitable.

2. Since infants are tender and dependent, emetics and the rest should not be prescribed for them. The learned physician considering the incapacity for speech and independent exertion should administer medicines in small measures agreeably to the ailment that afflicts them. He should also carefully, without erring, administer to all infants drugs that are sweet and astringent in taste, mixed with milk and of mild virtues in action. Medicines and drinks and food that are exceedingly fatty or dry or heating or sour or those that become acrid in digestion, or heavy are injurious to infants.

3, In place of *Vasti-karma* (Enemata) in children, purgatives should be administered, and in case of *marsana*, *pratimarsana* should be substituted.

4. In case of any disease of a child nursed at the breasts of a mother, those should be plastered with the pastes of drugs recommended by physicians for the particular malady and the child be made to suck the same.

5. Medicines under the head of particular disease should likewise be prescribed in the case of its appearance in a child or an infant, but then only the remedies of mild potency and those that do not disintegrate the body fat and *kapha* should be given in adequate doses, as mentioned hereafter, and administered through the vehicle of *milk and clarified butter*, *to a child living on milk alone*, while the nurse is to take the same medicine as well. In the case of a child fed on *milk and rice* the medicine should be administered *both to the child and the mother or nurse.* In the case of a chid living on *solid food only* decoctions should be given to *the child alone.*

6. Collirium, plasters, bath, massage, emetic and *pratimarsana* should be done to the child from its birth. *Gandusham* (mouth wash) after five years, *Nasyam* after the eighth year, purgatives after the sixteenth year and sexual congress after the twentieth year should be done.

Vamana Karma (Emetics) in children—

प्राय:चीरघृताशित्वाद्बालानांश्लेष्मजागदा:

तस्मात्वमनमेवायोसर्वव्याधिषुपूजितं

स्निग्धाएवसदाबालाघृतक्षीरनिषेवणात्
सद्यस्तान्वमनंतस्मात्पाययेन्मतिमान्मृदु
स्तन्यस्यतृप्तंवमयेत्क्षीरक्षीरान्नसेविनं
पीतवंतंतनंपेयामन्नादंघृतसंयुतां ॥

Vagbhata, Uttara—II.

Children by constantly indulging in milk and clarified butter, often suffer from Kapha-born diseases. Hence emetics are the best medicines in all the diseases of children. Owing to excessive indulging in foods consisting of milk and ghee, as soon as children get fever etc., emetics of mild potency should be administered.

To children who take *milk*, and *milk and rice*, emetics should be administered after giving the child a sufficient quantity of breast milk. And to those who take rice alone, emetics should be given after giving them a rice pudding called *peya* mixed with ghee.

This *karma* is being performed by Westerners by the name of Stomach-wash. Dr. Hutchison says, "This is the first time I have had occasion to mention washing out of the stomach as a therapeutic measure in children. I can only say that you will find it of the very greatest use in all cases, acute or chronic, whether in breast-fed or bottle-fed infants, where vomiting is a prominent symptom."

सिंदद्धकृष्णापामार्गबीजाज्यस्तन्यमाक्षिकं
चूर्णैर्वचायास्सक्षाद्रोमदसंमधुकान्वितं
क्षीरंक्षीरान्नमन्नंचभजतःक्रमशः शिशोः ॥

Vagbhata, Uttara.

To children who take milk alone, should be given the pulvs of Rock salt, Pippali (long pepper), Apamarga-bija mixed with clarified butter, milk and honey as emetic.

To those who take milk and rice should be given the Pulv. of Vacha mixed with honey as emetic.

To those who take rice only (solid food) should be given the fruit of Madana (Randia dumatorum) as emetic.

Virechana Karma (Purgatives) in children—

पिष्टवगंधर्वबीजानि त्वासुविणिंववारिणा
नाभौगुदेवालेपेन शिशूनांस्तनंपरम्
इन्दुलोचननेत्राणि शिखिभागंहियोजयेत्
तृदिगंधाकमुदोऽशतपुष्पाविचूर्णिताः

माषद्वयंगवांदुग्धैसेवयेद्दिनपंचकं
रेचयेन्मृत्तिकां शुद्धांशिशूतांहितमौषधं *Kumaratantra.*

The best purgative for a child is to plaster either on the navel or on the anus, with the paste prepared with castor seeds, excreta of a rat and lemon juice.

Langhanam (Fasting) in childhood—

सर्वं निवार्यते बाले स्तन्यं नैव निवार्यते
मातयालंखयेधात्रींशिशोरेत तेधलंखनं *Kumaratantra.*

Fasting for a child is to stop all other foods and to give breast-milk of its mother who indulges in light food. This is the way of fasting chi dren.

R/ Sushma Ela (Lesser cardamom) ... 1 part
Suddha gandhaka (purified Sulphur) ... 2 parts
Muhdada ... ... 3 parts

Prepare powders each weighing one Masha (grain) to be taken for five days.

Dosage in children—

तत्रमासादूर्ध्वं क्षीरपायांगुलिपद्द्वयग्रहणसम्मितामौषधमात्रांविदद्यात्कोलास्तिसम्मितां, कल्कमात्रां, क्षीरान्नादायकोलसम्मितामन्नादायेति । *Sushruta, Sareera.*

प्रथममासिजातस्यशिशोर्भेषजरक्तिका
अवलेह्यतुकर्तव्या मधुक्षीरसिताघृतैः
ऐकैकंवर्धयेत्तावद्यावत्संवत्सरोभवेत् *Vagbhata, Uttara.*

ततोर्ध्वमासवृद्धिश्शाद्यावत्षोशिकाब्दिके
विड़ंगंफलमात्रंतु जात मात्रंस्यभेषजं
ऐतेनैवप्रमाणेन मासिमासिविवर्धितः
कोलस्तिमात्रंक्षीरादेर्दद्याद्भेषजकोविदः *Kumaratantra.*

1. Medicines to the quantity of a small pinchful may be prescribed for a suckling who has completed its first month of life. *Kalka* should be given to a child fed on both milk and rice to the size of a stone of plum fruit, and the dose for child fed on rice only being of the size of a kola (Plum fruit).

2. In the case of a child one month old, drugs should be given in the form of an electuary through the vehicle of milk, honey, syrup, clarified butter etc., the dose being one *Rati* at first and gradually increased a *Rati* a month till it completes one year. After this time the dose is to be one *Masha* for each year of age till he is fifteen.

3. From the time of birth the dose should be one *vidanga*, afterwards it should be gradually increased by a *vidanga* a month till it completes its first year. During the period, when the child takes milk and rice, it should be of the size of a Plum, and when it takes rice alone it should of the size of a fig. *

Method of treating infantile fever—

ऐकद्वीत्रीणोचाहानिवातपित्तकफज्वरे
स्तन्यपायाहितंसर्पिरितिराग्यांयधार्धत:
नयतृष्णमयातत्रपाययेतशिशुस्तनौ
विरेकवस्तिवमनान्मृतेकुर्याच्छनात्ययात् *Sushruta—Sarira*

The use of clarified butter is not beneficial to the child on the first day of an attack of Vata-Jwara, within the first two days of an attack of Pitta-Jwara, and within the first three days of that of Kapha-Jwara. But the use of clarified butter may be prescribed for an infant fed on milk and rice, or on boiled rice alone according to requirements. In case of fever a child should be given no suck at all, lest the symptoms of thirst might develop. Purgative, Vastis or emetics are forbidden in the disease of children unless the disease threatens to take a fatal course.

Treatment of Vata-Jwara—

1. R/-

Decoction of
Sthira
Gokhura (Tinespora cordifolia)
Viswa (Dry ginger)
diaphoretic. Vala (Pavonia odorata)
Kshudra (Honey)
Chinnaruha
Kiratatikta (Swertia Chirata)

This should be given both to the child and its mother.

2. R/-

Either the decoction of
Panchamula
Or the decoction of
Guduchi (Tinospora cordifolia)
Draksha (Dried grapes)
Sariba (Hemidesmus indicus)
Bala (Pavonia odorata) (*Kumaratantra*)

*This is the regulated dose according to several authorities.

3. R/- Bhadradaru
Musta (Cyperus rotundas)
Yasthimadhu (Liquorice)
Varahakranta
Sitophal (sugar)

Prepare syrup with the above (Kumaratantra) and give in Vata-jwara.

Treatment of Pitta-jwara—

1. R/- Sariba (Hemidesmus indicus)
Utpala
Kasmarya (Gonelina Arboria)
Chinna (Tinospora Cordifolia)
Padmaka (Nelumbium speciosum)
Parpata (Oldenlandia Herbocia) *Kumaratantra*

Prepare decoction and give in Pittaja Jwara of children.

2. R/- Musta (Cyperus rotundus)
Parpata (Oldenlandia herbocia)
Useera (Andropogan neuricatum)
Vari (Pavonia odorata)
Padmaka (Nelumbium speciosum)

Prepare *Sitakashaya* * and give in Pitta-jwara of children.

3. Laja (fried paddy)
Nilotpala (Nymphea stellata)
Kana (piper longum)
Madhura (Fizyphus Nampeca)
Anjana (galena) ext. of Berberis Asiatica.
Sarkara (sugar)

Make powder with above drugs and mix with honey.
This should be given to children in Pitta-jwara (K.T.)

4. Musta (Cyperus rotundus)
Chandana (sandal wood)
Vasa (Adhatoda Vasika)
Hribera (Pavonia adorata)
Yasthi (Liquorice)
Amrita (Tinespora cordefolia)

Prepare decoction with the above and give to children.
This cures Pitta-jwara, thirst and burning sensation (K.T.)

* Sitakashaya is cold infusion prepared by steeping one part of the powdered drug in six of cold water for the night and straining the fluid in the morning.

5. Vasa (Adhatoda Vasika)
Parpata (oldenlandia herbocia)
Usheera (Andropogum nuricotum)
Nimba (Melia Azadirachta Indica)
Bhunimba (Swertia Chirata)

Prepare decoctinn and give.

Cures Pitta-jwara, Vomiting, Swasa and Kasa of children (K. T.)

Treatment of Sleshma Jwara —

1. R/- Abhaya (Terminalia Chebula)
Amlaki (Emblica officinalis)
Krishna (Piper longum)
Chitraka (Plumbago Zylanica)

Prepare powder.

This is *Deepana* and *Pachana* and cures Kapha-fever of children. (K. T.)

2. R/- Bilwa (Aegle marmellos)
Kushta (Sausurea aurienalata)
Varuna (Crataeva neervala)
Renuka (Piper anantiacum)

Treatment of Vata-Pitta fever—

1. R/ Musta (Cyperus rotandus)
Parpataka (Oldenlandia herbocia)
Chinna (Tinespora cordifolia)
Kirata (Chirata)
Viswabheshaja (dried ginger)

Prepare decoction and give

Cures Vata-Pitta jwara of children. (K.T.)

2. Usheera (andropogan neuricatum)
Madhuka (Liquorice)
Draksha (Dried grapes)
Kasmari (Gruelina arboria)
Nilotpalam (Nymphea stellata)
Parushakam (zyllocarpus granatum)
Padmakam (Nelumbium speciosum)
Madhukam (two parts)
Bala (Pavonia odorata)

Prepare decoction and give (K.T.)

Cure Vata-Pitta jwara of children.

K.T. = Kumaratantra by Ravana.

Treatment of Vata-kapha fever—

1. R/-

Kirata-tikta (swerta Chirata)
Musta (Cyperus rotandus)
Guduchi (Tinospora cordifolia)
Viswa-bheshajam (dried ginger)

Prepare decoction. This is called *Chaturbhadrika*

Cures Vata-Kapha jwara of children. (K.T.)

2. Mudga (green gram)
Tandula (rice)

Prepare Kanji with the above.

Cures Vata-Kapha jwara (K. T.)

Treatment of Pitta-Kapha fever—

1. R/- Triphala (three myrobalans)
Pichu mandu Gum of Neem tree)
Patola (Tricosanthus diocia)
Madhuka (liquorice)
Bala (Pavonia odorata)

Prepare decoction and give.

Cures Pitta-Kapha jwara. (K. T.)

2. Amrita (Tinospora cordifolia)
Indrayava (seeds of hollarrhena antidysenterica)
Arishta (sapindus trifoliatus—soap-nut)
Patola (Tricosanthus diocia)
Katurohini (Helleborus Niger)
Nagara (dried ginger)
Chandana (Sandal wood)
Musta (cyperus rotundus)
Pippali (Piper longum)

Prepare decoction and give with a little powder of Pippal.

Cures Pitta-Kapha jwara of children. (K.T.)

3. Dhanyaka (Coriander)
Chandana (Sandal wood)
Padmaka (Nelumbiam speciosum)
Musta (Cyperus rotundus)
Sakrayava (seeds of Hollarrhena antidysenterca)
Amlaki (Emblica officinalis)
Patola (Tricosanthus diocia)

Prepare *Sitakashaya* and give.

Cures Pitta-Kapha jwara of children (K. T.)

Treatment of Sannipata jwara—

1. R/ Decoc. Dasamula
Pulv. Pippali

Mix and give

Cures the complications of *Moha* and *tantra* in Sannipata jwara of Children (K. T.)

2. Bhadramusta
Abhaya (Terminalia Chebula)
Nimba (Melia azadirachta)
Patola (Tricosanthus diocia)
Madhuka (Liquorice)

Prepare decoction and give when hot.

Cures all varieties of fever of children.

3. Aragwadha (Cassia fistula)
Ativisha (Aconitum heterophyllum)
Musta (Cyperus rotundus)
Tikta (Swertia Chirata)

Prepare decoction and give.

Cures fever with the complications of Colic, Vomiting, Thirst, Jaundice and hæmorrhage of children. (K. T.)

Treatment of Vishama fevers—

1. R/

Either Avaleha prepared with—
Vasa (Adhatoda Vasika)
Vyadhi (Leppa)
Kana (Piper longum)

or Avaleha prepared with—
Kshudra
Amrita (Tinespora cordifolia)
Ananta (Hemidesmus Indicus)
Tikta (Neem)
Bhunimba or Chandana

Cures *Sita-jwara* of Children.

2. R/

Nimba-patra
Amrita
Ananta
Patola
Indrayava

Prepare decoction and give

Cures *Satata-Jwara* of children (K. T.)

3. R/

Decoc. Katukarohini (Picrorrhiza kurroa)
Pulv. Pippali (Piper longum)

Prepare a mixture and give
Cures *Ekahika-jwara* of children with *Kasa* and *swasa.*

4. R/

Draksha (dried grapes)
Patola (tricosanthus diocia)
Triphala (Three myrobalans)
Pichumanda (Bark of neem tree)
Vasa (Adhatoda Vasika)

Prepare decoction and give in Ekahika fever of children. (K.T)

5. R/ Guduchi (Tinespora cordifolia)
Chandana (sandal wood)
Usheera (Andropogan neuricatum)
Dhanya (Oryza sativa)
Nagara (dried ginger)

Prepare decoction and add a little sugar and honey.
Cures *tritiyaka jwara* (tertian fever) of children. (K.T.)

6. R/ Chandana (sandal wood)
Vasaka (Adhatoda Vasika)
Musta (cyperus rotandus)
Guduchi (Tinespora cordifolia)
Draksha (dried grapes)

Prepare Sitakashaya.
Cures *seetajwara* of children. (K.T.)

7. R/- *Panchagavaghrita*

Equal parts of milk, curd, clarified butter and urine of a cow and the expressed juice of cow dung duly cooked with the kalka of

	Triphala	Vidanga
	Chitraka	Trikatu
	Musta	Chavya
two kinds of	Haridra	Suradara
	Ativisha	
	Vacha	

(K. T.)

Treatment of fevers in general (सर्व्वज्वर चिकित्सा) :—

R/-

Bhadramusta (cyperus rotandus)
Abhaya (Terminalia chebula)
Nimba (Melia azadirachta)
Patola (Tricanthus diocia)
Madhuka (Liquorice)

Prepare decoction and give when hot
Cures all the fevers that afflict children. (K. T.)

R/-

Katphala (Mysica sapida)
Pushkara (Sassurea lappa)
Sringi (Rhus succedanea)
Pippali (Piper longum)
Madhu (Honey)

Prepare avaleha
Cures fever, cough, swasa, indigestion. (K. T.)

Treatment external :—

Murva (Sanseviera zeylanica)
Nisa (Curcuma longa)
Sarshapa (Brasrica campastris)
Chirata (Swertia Chirata)
Sweta (Hemidesmus indicus-white)
Samanga (Rubia cordifolia)
Ajamoda (Pimpenella involucrata)
Vina (Cyperus rotandus)
Goats' Milk

Prepare paste, and apply to the whole body and massage.
Cures fever of children. (K. T.)

Palankasha (Balsamodendron mukul)
Vacha (Acorus calamus)
Kushta (Lappa)
Gajacharm (Skim of elephant)
Vicharma (Skin of goats)
Nimba patra (Neem leaves)
Makshika (Honey)
Sarpi (clarified butter)

Mix and use for fumigation to children.
Cures fever. (K. T.)

Treatment of Infantile Diarrhœa (अतिसार चिकित्सा) :—

1. R/ Bilwa (Aegle marmellos)
Dhataki pushpa (Woodfordia floribunda flowers)
Lodhra (Symplocos racemosa)
Gajapippali (Scindapasus officinalis)

Prepare decoction and add a little honey.

2. R/ Kakoli (Tizyphus napeca)
Gajakrishna (Scindapasus officinalis)
Lodhra (Symplocos racemosa)

Prepare decoction with equal parts and add a little honey.
Cures infantile diarrhoea. (K. T.)

3. R/ Laja (fried paddy)
Saindhava (Rock salt)

Prepare powder and mix with honey.
Cures infantile diarrhœa (K. T.)

4. R/ Phalinya (Aglaia roxburghiana)
Anjana (extr. of Berberis asiatica)
Musta (Cyperus rotandus)

Prepare powder and mix with honey.
Cures thirst, vomiting and diarrhœa of children. (K. T.)

5. R/ Pippali (Piper longum)
Rasanjana (Extr. of B. asiatica)
Chutaphalastri (Kernel of mango)

Prepare powder with equal parts and mix with honey.
Cures vomiting and diarrhœa of infants. (K. T.)

6. R/

Prepare powder and mix honey
either with, Lodhra (Symplocos racemosa)
Pippali (Pipper longum)
Valaka (Andropogan muricatus)
or, Srirasa
Dhataki puspa (flowers of woodfordia floribunda)
Cures infantile diarrhœa. (K.T.)

7. R/ Nagara (dry ginger)
Ativisha (Aconitum heterophyllum)
Musta (Cyperus rotandus)
Valaka (Andropogan muricatus)
Indrayava (Seeds of hollarrhena anti-dysenterica)

Prepare strong decoction.
Cures all varieties of diarrhœa. (K. T.)

8, R/ Amrabijam (Kernel of mango)
Lodhra (Symplocos racemosa)
Dhatrephalarasam (juice of phyleanthus emblica)

Prepare powder and add butter milk of buffaloes. (K. T.)

9. R/ Samanga (Rubia cordifolia)
Dhataki (Woodfordia floribunda)
Lodhra (Symplocos racemosa)
Sariba (Hemidesmus indicus)

Prepare decoction and add honey.

(*Chakradatta*)

10. R/ Matanga (Long pepper)
Pippalimula (Stems of piper langam)
Lodhra (Symplocos racemosa).
Savara (A variety of lodhra)

Prepare decoction with equal parts.

or R/

Pulv. prepared with the aboue drugs.

(*Raja Martanda*)

11. R/ Samanga (Rubia cordifolia)
Dhataki (W. floribunda)
Padma (N. speciosum)
Vagastha
Kacchura (Macuna prurient)

Prepare yavagu.

Cures diarrhœa of children.

(*Chakradatta*).

12. R/ Dhataki (W. floribunda)
Bilwa (A. Marmellos)
Lodhra (S. racemosa)
Patha (Stephania hermandifolia)
Lajjalu (Mimosa pudica)
Vatsaka (Calamus rotang)
Dhanyaka (O. sativa)
Ativisha (A. haterophyllum)
Musta (C. rotandus)
Valakam (A. Muricatus.)
Gajapippal (S. officinalis)

either prepare decoction and add honey
or prepare avaleha.

Cures all varieties of diarrhœa of infants.

(*Sarangadhara*)

13. R/ Patha (S. hermandifolia)
Bilwa (A. marmellos)
Vatsaka (C. rotang)
Salmali twacha (bark of bomba malabarican)

Prepare powder and mix with milk.

Cures infantile diarrhœa.

(*Harita Samhita*).

14. R/ Tavaraja
Kana (Piper longam)
Saindhava (Rock salt)
Katutrayam (Trikatu)

Prepare powder and mix with honey.

Cures infantile diarrhœa.

(*Gadanigraha*).

(*To be continued*).

PULSE IN FEVERS ACCORDING TO THE AYURVEDIC MEDICINE

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The fever (jwara) in the modern system of medicine means a rise of the body temperature above the normal (taken to be 98 4° F.) as demonstrated by the thermometer. But 'fever' in Ayurveda dictates several other conditions in addition to a rise of body-temperature and probably there are cases where the bodily temperature is scarcely above the normal,

I. Pulse before the advent of fever :—

(1) अङ्गग्रहेण नाडीनां जायन्ते मन्थराः प्लवाः ।
प्लवः प्रबलतां याति ज्वरदाहाभिभूतये ॥ II. 4 ; II. 38

(2) सान्निपातिकरूपेण भवन्ति सर्ववेदना । II. 36 ; II. 38

(3) पूरा मन्दत्वात् स त्रसति तीव्र शनकैः याति खरतां ज्वरे । II. 24.

(I) The pulse becomes slow and jerky (before the advent of fever) due to aching pains in the body. In the burning sensation

(due to rise of temperature) in fever, the pulse becomes forcibly jerky (more bounding).

(2) In Sannipatic form (of fever), there is general soreness of the body.

(3) The pulse, which was slow before, becomes forcible and quick and beats with celerity.

II. Pulse in fever.

A. Simple fever (in general) :—

(1) उष्मवेगवहा हन्ते नाडी वेग ज्वरस्य तु। II. 12

(2) उष्मावेगवती चेष्टे नाडी वेगं ज्वरस्य सा। II. 27

(3) उष्मा वेगधरा नाडी ज्वरकोपि प्रजायते। II. 4 ; II. 18

(4) ज्वरकोपि[1,2] सोष्मा वेगवती नाडी[3]। I. 1 ; I. 2 ; II. 44 ; II. 17 ; II. 25 ; II. 26 ; II. 36 ; II. 20 ; II. 4 ; II, 29 ; II. 31 ; [1]ज्वरकोपेन, II. 26 ; II. 38 ([2]धमनी, [3]भवेत्) ; II. 1

(5) জ্বরপ্রকোপ হইলে সোষ্মা বেগবতী অতি হয়। II. 9

(6) ज्वरे तीव्रा प्रसन्ना च नाडी वहति पित्तत:॥ II. 20

(7) ज्वरे च वक्रं धावन्ति तथा च मारुत प्रवे। II. 4

(8) ज्वरात् उष्मा सा (नाडी) तु वेगवती सदा। II. 42

(9) জ্বরের গমন হইলে নাড়ী অতি সূক্ষ্ম হয়।
মন্দ মন্দ গতি চলে জানিহ নিশ্চয়॥ II. 9.

(10) नाडी सोष्मा सवेगा ज्वरकुपिते। II. 27

(11) पुष्टा ज्वरेषु धमनी तरिता विशेषा। II. 37

(12) पुरा मन्दत्वात् सा व्रजति तीव्र शनकै: याति खरतां ज्वरे। II. 24

(13) महावेगा यदा नाडी वेगवान्तु ज्वरस्तदा। II. 1

(14) वायसी वहति नाडी उत्कण्ठं ज्वरदाहकं। II. 2

(15) वर्णान् लघून् वदति या वहति द्वतीयं कालं।
ज्वरात् लवति तीव्रतरा ध्वलग्रा॥ II. 24

(16) सहज धमनी कालात् अर्द्धेतु ज्वर नाडिका वहति। II. 24

In we take the pulse characters collectively from the passages quoted above we can consider them under the following headings :— (a) Most of the treatises (1-4, 8, 10) describe the pulse as jerky (ushma) and frequent (vegavaha); one (13) describes it as very frequent (mahavega). According to (16) the pulse in fever beats in half the time it does in healthy condition ; that is, the pulse becomes frequent. The jerky pulse is compared to the progression

of a crow in (14), where the pulse is also described as agitated (utkantha) and causing burning by fever. (*b*) In (6) the pulse is described as sharp to the touch (tibra) and soft (prasanna). (*c*) In (11) the pulse is said to be full and frequent. (*d*) In (15) it is noted that the pulse which beats with intervals corresponding to the pronouncing of three short letters becomes more frequent in fever and the beats become disconnected with one another. In (16) it is said that the pulse which, owing to slowness, was before beating forcibly and slow, beats quickly in fever. (*e*) According to (7) in fever, as well as in derangement of Vayu, the pulse beats crookedly. This is an unusual condition, unless the patient has already a high blood pressure. (*f*) In (9) the pulse is described as fine (thready) and slow in fever. This no doubt represents an asthenic condition.

B. Pure uncomplicated fever :—

মণ্ডুকী ভুজঙ্গ মসালের গতি যদি হয়।
শুদ্ধ জ্বর বলি তারে জানিবে নিশ্চয়॥ II. 9

If the pulse resembles the progression of a frog, a snake and a mahasala fish, it indicates *puye* (uncomplicated) fever.

C. Antargata fever (Internal fever) :—

(1) अति शीता सवेगा च तिष्ठत्यन्तर्गते ज्वरे। II. 12

(2) अति शीता सवेगा च वृते पञ्चशरादिकं।
उष्मा नाडी वायुशीतमाचष्टेऽन्तर्गतं ज्वरं॥ II. 27

(3) शरीरं शीतलं यस्य स्वायुरुष्मो च लक्ष्यते।
ज्वरमन्तर्गतं विद्यात् इति वैद्यः प्रचक्षते॥ II 25

If the pulse is very soft and forcible (1, 2) and beats jerkily (2, 3) and has the rate of 55 ? (brute panchasaradikam), and if the body is cold while the pulse is jerky, it speaks of *antargata jwara.*

D. Chronic fever (Chira-jwara) :—According to Ayurvedic Medicine the fever which continues for seven nights is to be taken as acute (taruna). (II. 44).

चिरज्वरेतु चपला तुष्मा नोष्मा च कर्हिचित्। II. 28

In chronic fever the pulse is frequent, sometimes jerky, sometimes not.

E. Fevers due to or attended with indiscretion on the part of the patient :—

(1) क्रोधजे सङ्गलग्नाङ्गा समाङ्गा कामजे ज्वरे। II. 41

(2) अन्नाशित्वादसुस्थत्व जायन्ते नापिताः शिराः। II. 38

(3) ज्वरे च रमणे नाडी क्षीणाङ्गी मन्दगामिनी।
ज्वरे कामार्त्तिरूपेण भवन्ति विकलाः शिराः॥

II. 4 ; II. 38 ; II. 18

(4) उष्मत्वं विषमा वेगा ज्वरिणां दधिभोजनात्। II. 38

(5) জ্বর হইলে করে যদি দধি ভক্ষণ।
উষ্ণ বেগবতী নাড়ী করয়ে গমন॥ II. 9

(6) काञ्जिकया ज्वराक्रान्ते जायन्ते मन्थरा गतिः। II. 38

The pulse in fever arising from anger becomes full between the beats (the beats become connected with one another) (1).

The pulse in fever due to passion becomes low (the beats are so low as to be more or less continuous). (1).

The pulse in illness (fever) due to sour food becomes jerky (2).

The pulse in fever due to taking of kanji (the excess of water left after boiling rice) becomes slow (6).

The pulse after sexual intercourse in fever becomes slow and feeble. If one becomes much passionate in fever, the pulse becomes very quick and jerky (4, 5).

F. Pulse in intermittent fever :—

(1) क्षीणाङ्गगति विषम ज्वरे जानिबे निश्चय। II. 9

(2) ज्वरं शैत्यं वेपथोर्वी सम्भवं व्रजति द्रुतम्।
इयमेकाहिकादीनां व्याधिनां जननी मता॥
भूतग्रहे शिरा लक्ष्या माविराणैकाहिके ज्वरे॥ II. 20

(3) পালি জ্বরে ত্র্যহিকে নাড়ী বক্রগতি হয়। II. 9

(4) ऐकाहिकेन क्वचन प्रदरे क्षणान्तगामा विषम ज्वरेण।
द्वितीयके वाथ तृतीय तुर्ये गच्छन्ति तस्य भमिवत् क्रमेण॥

II. 36 ; II. 38 ; II. 4 ; II. 18

In Visamajwara (intermittent fever—evidently malarial) the pulse becomes weak (1).

In fever with rigor or trembling, the pulse becomes frequent; this is to be taken in quotidian diseases (fevers) and others. The pulse is same in one under the influence of a ghost and in the quotidian fever (2).

In tertian fever the pulse becomes crooked (3). This evidently refers to a low tension pulse with cardiac action.

In quotidian intermittent fever, the pulse sometimes recedes for a little distance from the root of the thumb) but comes back after a short while (4). This evidently refers to the muscular spasm during rigor causing to disappear the pulse from the wrist for

the time being. In quartian, tertain and fourth day fevers, the pulse becomes jerky (or forcible to the touch) and beats like (the rolling of) a wheel (that is, becomes very quick).

G. Pulse in fevers due to derangement of *Vayu*, *Pitta* and *Kapha*, singly or in various combinations :—

It should be noted at the outset that the febrile conditions caused by deranged *Vayu*, *Pitta* and *Kapha* differ from the simple deranged conditions in degrees only. In some treatises the two pulse conditions are seldom differentiated.

(1) *Vayu*.

(1) वातेन वक्रगमना स्फुरिता विलोला। II. 4 ; II. 37.

(2) ज्वरे च वक्रा धावन्ति तथा च मारुतप्लवे। II. 38

(3) वक्रा च चपला शीतस्पर्शा वातज्वरे भवेत्।

II. 29 ; II. 4 ; II. 20

(4) नाडिका वहति कठिना स्थूला वायो। II 18

(5) सूक्ष्मा शीता स्थिरा नाडी मन्दा सहजा वातजा।

II. 26 ; II. 4 ; II. 38

(6) सौम्या सूक्ष्मा स्थिरा नाडी सहज वातजा। II. 4 ; II. 26 ; II. 38

(7) सौम्या सूक्ष्मा स्थिरा मन्दा नाडी सहजवातजा।

II. 4 ; II. 26 ; II. 30 ; II. 36 ; II. 38

(8) स्थूला च कठिना शीघ्रा स्पन्दते तीव्र मारुते।

II. 36 ; II 4 ; II 30

(9) रूक्षवात भवेत्तस्य नाडी स्यात् पित्तसन्निभा। II. 4 ; II. 30

(10) कठिना स्थूला दायो त्वरा भवति ज्वरे। II. 24

(11) महावेगा यदा नाडी वहते तन्तुसदृशा।

तदा वाताधिकं ज्ञेयं॥ II. 1

(12) वातज्वरे तु संभूते दात्यूह गतिमादिशेत्। II 12

Taking together the characteristics of fever due to deranged Vayu from the various treatises, we enumerate them as follows :—

(i) The pulse is crooked (that is, with a low rise) (1, 2).

(ii) It is hard (high-tensioned) (4, 10)

(iii) It is expanding (*sphurita*) (1).

(iv) It is shaky (*vilola*), that is, with a low, rounded top ; and smooth to the touch *sitasparsa*) that is, with rounded top (3).

(v) It is large (that is, with a large volume) (4, 10) ; according to one (11) it is thready.

(vi) It is very forcible (*mahavega*) (11).

(vii) It is frequent (2).

(viii) It resembles the progression of gallinule (12).

In simple derangement, the pulse is slender (5, 6, 7), soft [*sita* (5 ; *saumya* (6, 7)], slow 5, 7) and quiet (that is, not much high-tensioned) (5, 6, 7).

In severe derangement, pulse becomes hard (high-tensioned) (8), full (8), quick (8) and approaches the Pitta-pulse (9).

Apart from the pulse conditions depicted above, the other signs and symptoms as described in Ayurvedic works make us think that the present type of fever probably corresponds to "Sthenic fever" of the Modern Medicine. Thus we find in Dorlands' Medical Dictionary : "Sthenic fever, fever characterised by a full strong pulse, hot and dry skin, high temperature, thirst and active delirium."

(2) *Pitta.*

(1) पित्तेन शीघ्रा चलिता द्रुतगामिनी स्यात्। II. 4 ; II. 37

(2) सहज सरला दीर्घा पित्तज्वरे। II. 24

(3) उष्म पित्त शरीरिणः। II. 1

(4) भृता (द्रुता) च सरला दीर्घा शीघ्रा पित्तज्वरे भवेत्।

II. 1 ; II. 36 ; II. 4 ; II. 34 ; II. 20 ; II. 26.

(5) मृणाल सरला दीर्घा नाडी पित्तज्वरे भवेत्। II. 30 ; II. 20

(6) पित्तेतु कृकलास्य धमन्यां वर्त्तते कटु। II. 12

The pulse shows the following characteristics :

(i) It is jerky (1).

(ii) It is forcible (to touch) (1, 2).

(iii) It is full (4).

(iv) It is long (2, 4, 5) and straight (that is, with a straight vertical rise) (4) ; [straight like the stem of a lotus (5)].

(v) It is soft (*sahaja-tarala*) (2).

(vi) It beats with celerity (4) and with frequency (4).

(vii) It resembles the progression of a chamaleon.

The present type of fever, with its accompanying signs and symptoms as depicted in the Ayurvedic Medicine, makes us consider that it corresponds to one attended with deranged liver (as acute congestion of the liver, or acute hepatitis).

(3) *Kapha.*

(1) नाडी कफेन चलिता यदि मन्थरान्ता। II 4 ; II. 37

(2) मन्दा च सुस्थिरा शीता पिच्छिला श्लेष्मके भवेत्। II. 29 ; II. 20

(3) श्लेष्मज्वरेतु संभुने धमनी वर्त्तते मृदु। II. 12

(4) नाडी तनुसमा मन्दा शीतला श्लेष्मदोषजा। II. 36 ; II. 38 ; II. 4

The pulse in Kapha-fever shows the following characteristics :—

(i) It is soft (2, 3, 4) (that is, low-tensioned)

(ii) It is slow (1, 2, 4).

(iii) It is thready (4).

(iv) It is quiet (that is, with a very low-ascent) and slippery (that is, beats smoothly beneath the examining fingers (2).

This type of pulse probably corresponds to the asthenic fever of Modern Medicine.

(4) *Vayu* and *Pitta*.

(1) स्थूला च सरला चैव कठिना वातपित्तजा। II. 1

(2) स्थूला चपला तरला कठिना वातपित्तजा। II. 26

(3) वक्रा च ईषच्चपला कठिना वातपित्तजा। II. 29

(4) निरन्तरं तु चपला त्वग्रीवत् प्रवहेत्तु सा।
सूक्ष्मा तन्तुसमा मन्दा वातपित्तज्वरे भवत्॥ II. 12

(5) चञ्चला तरला स्थूला कठिना वातपित्तजा II. 36 ; II. 2 ; II. 30.

(6) বক্র হয়ে নাড়ী যদি করয়ে গমন।
বাত পিত্ত জ্বর বলি জানিবে কারণ॥ II. 9.

(7) ब्रह्मनाडी हंसगतिरीश्वरो वैष्णवं स्पृशन्।
त्रिमूर्त्तको वक्रगति वातपित्तस्य लक्षणं॥
ब्रह्मनाडी कुक्कुटगतिः विष्णुरीश्वरकं स्पृशन्।
त्रिमूर्त्तको वक्रगति पित्तवायोश्च लक्षणं॥ II. 16.

The pulse in fever arising from the derangements of Vayu and Pitta becomes full (1, 2, 5), hard (high-tensioned) (1, 2, 3, 5), has a straight rise (1) with an acute (sharp) tip (*agnibat*—4) or is flowing (that is with a rounded top) (2, 5), and beats with celerity (2, 4, 5); it may be curved (that is, with a rounded top) (3, 6). According to (4), it always beats with celerity, has a sharp top, is slender and threadlike and is slow.

According to (1) the Kaphanadi (pulse indicating Kapha principle) has the progression of a goose; the Vayu pulse touches the Pitta pulse; all the three nadis (Vayu, Pitta and Kapha) are deranged; such is the sign of *Vayu-pitta* derangement.

The kaphanadi has the progression of a fowl (that is, slow); the pitta-pulse touchs the vayu-pulse; the three nadis are deranged; such is the sign of *Pitta-Vayu* deragement.

The following commentary is added to the passage No. 7.

'ब्रह्मनाडी' श्लेष्मनाडी 'हंसगति'; मन्दगतेसति 'ईश्वरः' वातनाडी 'वैष्णवं' पित्त नाडी 'स्पृशन्' स्पृशन् गन्त 'त्रिमूर्त्तकः' वातश्लेष्म पित्त नाड्यः प्रकृति पूर्वापर दृष्टिगतिः एतन्मन्दगतिर्यदि वातपैत्य-

लक्षणमित्युच्यते। एतन्मन्दवक्रगत्यामन्तर्गत लक्षणमित्युच्यते; एतदृगति जवगतिर्यदि वातपैत्यज्वर लक्षणं इत्युच्यते।

'ब्रह्मनाडी' 'कुक्कुटगति' मन्दगते सति 'विष्णुः' पित्तनाडी 'ईश्वरं' वातनाडी 'स्पृशन्' सन् 'त्रिमूर्त्तकः' वातश्लेष्म पित्य नाड्याः वक्रगतिः पूर्व्वापर दृष्टिगतिः एतन्मन्दगतिर्यदि पित्तवायु लक्षणमित्युच्यते। एतन्मन्द वक्रगत्यामन्तर्गतमित्युच्यते एतद्गति ऋजुगतिर्यदि पैत्तवायुज्वर लक्षणं इत्युच्यते।

From the commentary it appears that the pulse in fever due to derangements of Vayu and Pitta is slow and curved (high-tension). If the Vayu condition predominates the pulse becomes quick. If the Pitta codition becomes strong, it beats with a straight rise.

(5) *Vayu* and *Kapha.*

(1) अतिउष्णाच महावेगा नाडी वातकफान्विता। II. 1.

(2) सम्यक् स्वस्थानिका नाडी कठिना स्पन्दते क्षणात्।
शीघ्रा सवातकफज्वरे वहति नाडिका॥ II. 12.

(3) ईषच्चदश्यते तुष्णा मन्दास्थात् श्लेष्मवातजा।
II. 29; II. 4; II. 26; 36; II. 38.

(4) निरन्तरं खरं रूक्षं मन्दश्लेष्मातिवातलं। II. 38.

(5) विष्णु नाडी मन्दगति ब्रह्मण ईश्वरं स्पृशन्।
त्रयस्त्र नाडी वक्रगति श्लेष्मवायो लक्षणं॥
अर्धं नाडी मन्दगति मृतको जीवकं स्पृशन्।
त्रिमूर्त्तको वक्रगतिर्वात श्लेष्मस्य लक्षणं॥

Commentary :—

'विष्णु नाडी' पैत्य नाडी 'मन्द गति' मन्दगतेसति 'ब्रह्मण' श्लेष्म नाडी 'ईश्वर" वातनाडी' 'स्पृशन्' सन् त्रिमूर्त्तकः' वातश्लेष्मपित्तनाड्याः 'वक्रगतिः' पुर्वापर दृष्टिगतिः एतन्मन्दगति यदि 'श्लेष्मवायु' लक्षणमित्युच्यते। एतन्मन्दवक्रगत्यामन्तर्गत लक्षणमित्युच्यते एतद् वेगगतिर्यदि श्लेष्म वायु ज्वरमित्युच्यते।

'अर्धनाडी' पित्तनाडी 'मन्दगतिः' मन्दगते सति 'मृतकः' वातनाडी 'जीवकं' श्लेष्मनाडी 'स्पृशन्' सन् 'त्रिमूर्त्तकः' वातश्लेष्मपित्तनाड्याः 'वक्रगतिः' पूर्वापर दृष्टिगतिः एतन्मन्दगतिर्यदि वातश्लेष्म लक्षणमित्युच्यते एतन्मन्द वक्रगत्यामन्तर्गत लक्षणमित्युच्यते एतज्जवगतिर्यदि वातश्लेष्म ज्वर उच्यते। II. 16.

The pulse in fever arising from the derangements of *Vayu* and *Pitta* is jerky [very jerky—(1), slightly jerky—(3)], forcible (1), slow (3, 4) and rough (that is, high-tensioned) (4). According to (2), the pulse is generally normal but at times becomos hard and quick. According to (5), the Pitta pulse is slow; the Kapha-pulse touches the Vayu-pulse or vice versa. The three nadis are abnormal. It thus appears that the pulse is slow and curved (that is, high-tensioned) If the Vayu predominates the pulse becomes forcible; if the Kapha gets the upperhand, it become quick.

(6) *Pitta* and *Kapha.*

(1) अतिसूक्ष्मा च वेगाच शीतला यहति यदि II. 1.

(2) सूक्ष्मा तन्तुसमा मन्दा श्लेष्मपित्त ज्वरे भवेत् । II. 12.

(3) सूक्ष्मामाशीत् स्थिरा नाडी पित्तश्लेष्म समुद्भवा ।

II. 26 ; II. 36 ; II. 4.

(4) सूक्ष्मा सास्वस्थगा नाडी मन्दा तन्तु समा भवेत् ।
शीतला दाहवेगार्त्ता श्लेष्मपित्तज्वरे भवेत् ॥ II. 12.

(5) तन्तु तुल्या मन्दगति किञ्चिदुष्णा भवेत् । II. 20.

(6) सूक्ष्मा शीता स्थिरा नाडी पित्तश्लेष्मसमुद्भवा । II. 12.

(7) कूर्म्मगतिस्तमो नाडी सात्विकी राजसंस्पृशन् ।
त्रिगुणोवक्रको गतिः श्लेष्मपित्तस्य लक्षणं ॥
मृतनाडी मन्दगतिरर्धको जीवकं स्पृशन् ।
विमूर्त्तको वक्रगतिः पित्तश्लेष्मस्य लक्षणं ॥

Commentary—

'तमोनाडी' वातनाडी 'कूर्म्मगतिः' मन्दगते सति 'सात्विकः' श्लेष्मनाडी 'राजसः' पित्तनाडी 'स्पृशन्' सन् 'त्रिगुणः' वातश्लेष्मपित्तनाड्यः 'वक्रगतिः' पूर्वापर दृष्टिगतिः एतन्मन्दगतिर्यदि श्लेष्मपैत्यलक्षणमित्युच्यते एतमन्दवक्र गत्यामन्तर्गतलक्षणमित्युच्यते एतद्गतिर्वेगगतिर्यदि श्लेष्मपित्त ज्वरलक्षणमित्युच्यते ।

'मृतनाडी' वातनाडी 'मन्दगतिः' सति 'अर्धकः' पित्तनाडी 'जीवकं' श्लेष्मनाडीं 'स्पृशन्' सन् विमूर्त्तकः' वातश्लेष्मपित्तनाड्यः 'वक्रगतिः' पूर्वापर दृष्टिगतिः एतद्गतिर्यदि पित्तश्लेष्मलक्षणमित्युच्यते। एतन्मन्दवक्रगत्यामन्तर्गत लक्षणमित्युच्यते एतज्जवगतिर्यदि पित्त श्लेष्मज्वर लक्षणमित्युच्यते । II. 16.

The pulse in fever due to deranged Kapha and Pitta has the following characteristics :—

(1) It is small (fine) (4, 6) or very small (very fine), thready (2, 4, 5) and nearly imperceptible (*sthira*) (3·6). (2) It is soft to the touch (*sitala*) (2, 4, 6) or slightly jerky (*ushna*) (5). (3) It is normal (otherwise) than *sthira* and is attended with burning (sensation in the body) (4).

According to (7), the pulse is slow and forcible if the Kapha derangement predominates and it becomes slow, but beats with celerity (the individual beats are quick) if the Pitta derangement predominates.

(7) *Sannipata.*

(1) सान्निपातिकरूपेन भवति सर्ववेदना ।
सर्वलिङ्गसमायुक्ता सर्व्वज्ञा परिकीर्त्तिता । II. 4.

(2) সান্নিপাত জ্বরে সর্ব্বাঙ্গ বেদনা ।
বিকৃতি মোন্দার গতি জানিবে লক্ষণ ॥ II. 8.

(3) क्षणे शीता क्षणेन्युष्ण क्षणेवक्र क्षणे भृता ।
ईदृश वहते नाडी सन्निपात विनिर्दिशेत् ॥ II. 1.

(4) मन्दं शिथिल शिथिला व्याकुल व्याकुला या स्थित्वा स्थित्वा वहति धमनी
याति नासन्नसूक्ष्मा । II. 12.
निस्पन्दा च स्फुरति न युनयाङ्गुलिं स्पृशति ।
भावैरेवं बहुविधं गतिं सन्निपात ज्वरेष ॥ II. 47; II. 12.

In fever due to Sannipata, the pulse shows the following characteristics :—

(1) There is soreness of the whole body and the pulse shows the characteristics of all the derangements (1, 2).

(2) The pulse becomes abnormal and slow (2).

(3) The pulse becomes soft, jerky, curved and full at different times (3).

(4) The pulse in Sannipata fever becomes slow (in its excursion), relaxed (very soft), agitated (that is, very low), beats with long intervals between them, becomes imperceptible, then becomes expanding and again does not touch the fingers (that is, disappears); it beats in this manner with different kinds of movements.

It appears that any adynamic or typhoid condition of fever is indicated by Sannipata.

Health and Hygiene

SLEEPINESS AND WAKEFULNESS

The Cure of Insomnia

(By J. Louis Orton, Author of Rational Hypnotism etc.)

Insomnia, or sleeplessness, is not necessarily a serious matter. Nevertheless, the fact should be emphasised that lack of sleep, even in otherwise healthy persons, and whether the result of intention or not, tends to seriously interfere with the efficiency of mental functions, causes defective memory and inability to fix the attention; it also induces extreme sensitiveness of the eyes, with hallucinations of sight; and, of course, causes a general lack of energy. Pain, fever, brain excitement, certain organic changes in the brain, anaemia, and neurasthenia may each lead to or cause insomnia. Naturally, therefore, insomnia is much concerned with the obstinacy of complaints in which it occurs.

If a healthy and vigorous person takes too much food he or she is likely to be rendered sleepy, part of the energy which might have been used by the brain having been drawn to the stomach in order to aid digestion. On the other hand, fasting and underfeeding tend to cause wakefulness. Sleeplessness sometimes results from too much mental activity just before retiring, or from nervous irritability—due, for example, to food "lying heavy on the stomach," or to constipation. Cold feet, impure air, too much or too heavy bedclothing are other causes. But the mental element is a very strong one. Suspense is extremely likely to prevent sleep; prisoners condemned to death are wont to suffer from sleeplessness until they believe that all chance of reprieve is at an end, and the night before the execution is usually a peaceful one. Many cases of persistent partial insomnia are the result of expectation; and a fake remedy (e.g., coloured water) if supposed to be a powerful antidote, often proves efficacious. If one tries hard to go to sleep one remains awake until all effort is abandoned. That is why persons attempting to make themselves go to sleep by imagining watching sheep jumping through a hedge, ships sailing out to sea, and so on, often defeat themselves. Similarly, persons who use auto-suggestion for the purpose of inducing sleep are wont, through effort, or attempts to analyse what effect the suggestion is having, to negative the soporific effect that would otherwise occur from the process.

THE TREATMENT

As an aid to refreshing sleep, hygienic living—mental as well as physical—should receive particular attention. Many articles of diet that

in themselves would tend to induce wakefulness may be prevented from doing so, expectation to the contrary being the controlling factor. Thus tea and coffee, taken late in the day prejudice the interests of sleep, but may be partaken of freely without producing that effect—as I particularly noticed when resident in Northumberland. To resort to laudanum or chloral is harmful, and genuine sleep is not inducible through either of those agents, unless it follows the artificial. I do not believe in having solid food within three hours of retiring; but I recommend at the last meal either onions or lettuce. The onions have a peculiar essential oil which is highly soporific. Lettuce contains, particularly in the stem when the plant is flowering, a substance called "lactucarin" (not laudanum, as often stated), and when lettuce cannot be eaten the juice can be advantageously used for procuring slumber. I may add that lettuce juice is often of great value where a person is in great pain.

When restlessness is due to congestion about the head, vinegar and water, sponged over the forehead and temples, whilst the lower part of the body is kept warm, is useful in many cases.

Sleeping on the back is liable to cause nightmare, and lying on the left side disagreeable dreams. Children are prone to sleep lying on their stomachs, a particularly good condition after a meal as the eructations can most readily escape. Many adults will find that they themselves sleep very soundly lying on their stomachs, the left arm lying over the small of the back, and the face and right hand (the right arm above the head) turned towards the left. If you sleep on your right side (or left side) you should be careful to slightly bend forward at the neck that all but insures breathing through the nose.

Have the feet warm before getting into bed. Indians and hunters make a rule of sleeping with their feet turned towards the camp fire.

HOW TO BREATHE

I advise persons inclined to be wakeful to utilise respiration in this way :—Take a breath slowly through the nose. Don't sniff, for that contracts the passage. The chest acts like a pair of bellows, and you would think it absurd to do anything at the nozzle in order to fill the bellows. Recollect, therefore, that it is the expansion of the chest which allows the breath to enter, and not the entering breath that causes the chest to expand. Having taken the breath, exhale whilst mentally picturing it, as if a vapour passing downwards to the feet. Nerve energy and blood follow the direction of thought (we call this "dirigation" of the blood) and placidity and drowsiness result. Again, don't try hard to go to sleep, but give way to the ideas you have conjured up, and, for physical as well as mental reasons, sleep is then likely to come suddenly—of course, without your noticing when.

In conclusion, I should point out that as insomnia, if allowed to progress very far may be all but irremediable, hypnotism, which is probably the most powerful agent in existence for correcting the condition and tendency, is indicated as a most desirable means of treatment in advanced cases. It is a stupendous error to regard hypnotism as morbid, or even, in the strict sense, abnormal. As professor McDougall (reputed to be the greatest living all-round psychologist) writes : "After a long period of unscientific dogmatic denial, the scientific world at last recognises that this condition can be induced in the great majority of normal persons, and that it is in itself perfectly harmless."—"*Health for All.*"

SECRET OF HEALTH

Why I Never Caught Cold, Fever or Even 'Flu'

(By H. H. B. S. Pant, Chief of Aundh.)

The real test of health is not mere roundness of form, nor prominent muscles, nor absence of serious illness nor possession of mere bodily strength. It is only when all the internal vital organs, such as the brain, heart, lungs, liner, stomach, kidney, uterus, intestines, skin, etc., perform their respective functions normally, that you may be said to possess perfect bodily health and perfect mental energy.

When you get up in the morning from a sound sleep overnight, you should feel buoyantly energetic, and full of pep and spirit to do your daily duties without the use of any stunulating drinks, as tea, coffee, etc.

If you desire to possess a radiant bodily and mental health, as you undoubtedly do, you will be interested in a practical system—simple and inexpensive system—worked out by me after mature thought, long experience and many experiments. The system, methodically followed, will enable you in a natural way to restore the impaired functions of the body and brain and to prevent the inroads of disease or germs.

FUTILITY OF DRUGS

You would naturally ask—"When there are so many doctors, specifics and patent medicines to cure us, where is the necessity of your system of exercise or any other ? To this, allow me to reply : In spite of the so-called advance of medical science, the incidence of disease is appallingly great, and ailments and diseases unknown to our grand and great-grand-fathers have been at present taking a heavy toll of deaths from amongst our young men and women.

The following quotation in this connection from "Health for All," a London Magazine for April, 1929 will, I hope, serve as an eye-opener :

'The population has drunk millions of gallons of drugs prescribed by medical men aad sold by chemists, and are not better off"

A MORE SERIOUS ASPECT

"There is another, and much more serious, aspect of the drug question to take into consideration, We refer to the growing practice of resorting to drugs and patent medicines by an ever increasing number of susceptible people. We have only to study the advertisement columns of our newspapers to realise what an enormous amount of money must be spent upon all kinds of dope. Who can say how many drug-addicts there are in our country to-day ? Against the one or two cases of drug addiction that occasionally come to light, there must be a huge number of people who use drugs secretly, and who end up by becoming drug-addicts."

Most of the doctors, if not all, administer medicine to suppress the symptoms of disease, never attempting to remove the cause of disease. As long as the cause is present no amount of drugs or specifics would be of any avail.

The reader will thus be convinced of the futility and folly of drugs and medicines.

HOW TO DEAL WITH THE PROBLEM

The only solution to solve this serious problem is to be honest with yourself and ascertain your complaints and failings and start at once on doing the Namaskar exercise and on a natural diet.

After giving a thorough trial to most of the Indian and foreign systems of physical exercise, I find from actual experience that Namaskar is the all-round exercise and one that is most efficient to cure and prevent disease.

Although over 60 years of age. I have never had any ailment or disease during the past 25 years. I never caught even an ordinary cold, which is generally regarded as inevitable. Even the most dreaded epidemics such as 'flu', bubonic plague, etc., never affected me. It is wrong to boast, but I think I never shall.

"How fortunate you are," you might say. No, not at all. If you keep your blood pure and healthy by doing Namaskar exercise and by correct diet, you too, like myself will be able to defy any disease or germ

The Namaskar exercise has also wonderful effect on the performer's mind and intellect. Since I commenced this systematic Namaskar physical exercise, I have been strenuously working twelve hours every day I don't remember a day when I felt wearied or worried. Every year seems to instil into me renewed energy, enthusiasm and ambition.—"*The Leader*."

HAZARDS TO CHILDREN

Common Accidents and their Remedies

A mother of four small children found employment to help out with the family expenses. She locked the children in the house with admonitions to be good and went to her work. On her return she found the police and neighbours in her home. Her four children were dead from asphyxiation by gas. One of the children had opened the cocks on the gas stove. The warning is that you should never leave a small child alone.

Within a few months the Michigan newspapers gave accounts of six peculiar strangulation accidents. Two of these were caused by rope lariats used by small boys playing cowboy and three of the victims were chocked to death by toy balloons, the mouthpiece in each case being drawn into the child's windpipe. The sixth was strangled when her fur neckpiece caught on a sleigh while she was trying to catch a ride.

CUTS AND SCRATCHES.

Cuts are so common that parents need be careful about leaving sharp dangerous articles around the house where the children may find them. Sharp tools, razors, and carving knives should be kept out of the reach of little children.

Many injury resulting in partial or total blindness happen to children as a result of careless play with sharp sticks, pencils, scissors, bows and arrows, air guns, etc.

Untinned rakes and pitchforks are serious accident hazards. Anyone selecting gifts for children should avoid toys that have sharp points, sharp edges or other accident possibilities and instead choose safe and constructive playthings of which there are plenty to be found. If little children need scissors for cutting out pictures blunt pointed scissors should be provided.

Children are apt to play with almost any article they happen to find even if it is in the waste-basket rubbish heap or alley. Things that adults would not recognize as desirable playthings may present fascinating possibilities in small boys and girls. For this reason it is wise to dispose of all waste articles as soon as possible. Tin cans and broken glass are bad accident hazards and should be disposed of in such a way that the children will not find them and also so that the men who collect the rubbish may not be cut by any sharp edges or rusty nails. After food has been removed from a tin can, close the cover of the can before throwing it away. Small pieces of broken glass may be put in an empty tin can, stuffing some paper above the pieces to keep them from falling out, and then pushing the top of the can down over the contents.

NAIL WOUNDS

Children have a natural instinct for constructing and if they can find any boards or boxes they delight in building something with them. This is one of the finest forms of play, provided there are no projecting nails in the boards. Parents should teach children to be on their guard against upturned nails and to remove any that they find or to pound them down. Lockjaw (tetanus) sometimes results from puncture wounds such as are caused by stepping on a nail. The wise thing to do therefore is to call a doctor to take care of such injuries.

Boys and girls should be encouraged to form the habit of taking care of wounds and should be told why it is wise to put iodine on even a slight cut. In schools that are visited daily by a school nurse the pupils come to her for treatment as a matter of course without the slightest hesitation.

Dangeroes practices that cause serious cuts may be summarized as follows :—

Walking or running with knife or scissors in hand.

Carrying things in the mouth while playing.

Handling articles with sharp edges.

Putting sharp knives in a drawer with other kitchen utensils.

Pushing against the glass part of a door

Exposing the eyes by careless play with sharp pointed articles —

"From Calendar of American Rolling Mill Company, Ohio."

MASSAGE AS AN AID TO HEALTH

Need of Providing Facilities in Cities

(By Sir W. Arbuthnot Lane)

To the dwellers in our large cities the absence of a certain habitual amount of exercise is a matter of constant anxiety. The daily routine may entail only a short walk, a train or motor-car journey, none of which affords any such exercise to the abdominal muscles and organs as is essential to keeping them in health and the intestines in a state of activity.

Upon the abnormal delay of the products of digestion in the gastro-intestinal canal depend all those diseases with which we are so painfully familiar in civilisation, and none of which can develop in one whose digestive system works automatically and perfectly. As so many of our brain workers spend most of their office hours in a sedentary occupation, the disability, mental and physical, which results becomes more and more conspicuous as the years pass by.

During this time the worker realises only too clearly that his physical activities are steadily deteriorating, while the interest taken in his work, and the diminution of his capacity to form important decisions are almost unconsciously becoming more and more pronounced.

To meet this he endeavours to take exercise on Sundays, and this he may supplement on Saturdays as well, but in the days of the week which intervene he is obliged, especially during the winter months, to fall back upon some systematic exercises taken indoors on one or two occasions during the day.

To such a man, massage, even for a short period, is of great value, since it supplements to a great extent the abscence of a more natural form of exercise in the open air. There are now so many men and women who are most expert at massage, and from long experience are able to secure for their clients a maximum of physical benefit in quite a short while that the time requisite for it can be readily stolen from the rest of the day.

The advantage which such massage can afford to the busy worker is almost incalculable, and well repays the small financial outlay involved. While efficient massage keeps the digestive system functioning normally, and the muscles in a state of activity, it also prevents that accumulation of fat in the abdominal wall and in the intestines which is so disfiguring and, particularly about the heart, so dangerous to life, also handicapping activity. Such massage renders life more bright and enjoyable in consequence.

To the boy who has left his school or university the abrupt transition from a very active physical life to one of almost complete physical lethargy is a serious factor, and in our civilisation, crowded as it is by business and social engagements, his opportunities for exercise are very limited and too often quite inaccessible.

It is obvious that it would be a great advantage to the members of every social club if they were furnished with means of obtaining massage treatment to which access could be had at all times of the day.—"*The Daily Mail.*"

FOOD THAT AIDS IN CONVALESCENCE

After sickness during convalescence the right food is probably more important than any drug. Where the illness has been severe so as to necessitate the services of a physician, he will nearly always direct what kinds of food ought to be eaten by the patient and his orders should be followed implicitly.

But after ordinary illness, when the body is weakened and when appetite is not vigorously normal, it is well to serve the patient food which tempts the taste, yet food that is easily digested and assimilated,

[illegible] such food, which has the additional advantage that it is easy to prepare, is rolled white oats.

This natural food has virtually every element which is needed to nourish and build up the body. It contains a substantial proportion of protein, and even larger amount of carbohydrates. In addition, it is rich in minerals and vitamines.

There is certain amount of bulk or roughage in oats, too, which is highly desirable for the convalescent. This helps the intestines to perform their proper work. Oats, furthermore, are not heating to the body.

Doctors the world over prescribe this cereal for convalescence from almost all kinds of illness.

Medical News

THE EXAMINATION OF AYURVEDIC IRON BHASMAS

P. S. Varma, M. Sc., A. I. I. Sc., Professor of Chemistry, Benares Hindu University Ayurvedic College observes :—

The bhasmas of iron are used extensively in Ayurveda and are said to be efficacious in asthma, intestinal worms, general debility, wasting diseases, colic pain, nervous disorders, jaundice and other blood diseases. There is a description of three kinds of iron in Ayurveda, viz., *mund loh* (native iron), *tikahan loh* (steel iron) and *kanti loh* (magnetic iron), out of which the latter two only are used for preparing Ayurvedic iron bhasmas.

The method of preparing the bhasmas consists in making the iron into the form of sheets, dipping these red-hot for seven times into the decoction of triphala mixed with cow's urine. Iron thus purified is kept in the decoction of triphala for seven days in sun-light, then taken out, washed with cold water, put again into the decoction of triphala and boiled for one day. The iron is then washed with cold water, ground very finely along with a number of drugs in an iron mortar and made into a rupee-shape, dried in the sun and then put into a clay crucible and fried for 24 hours in a fire made of cow-dung cakes and kept till it cools down. It is then taken out, ground with the juice of some more drugs and the same process repeated 10 to 100 times. The colour of such a preparation should become that of the cover of a tamarind seed with a peculiar shining lustre. Such a preparation is ready for use.

Under the auspices of the Ayurvedic College of the Benares Hindu University, the above bhasma was prepared under the guidance of Kaviraj Pratap Sinha Rasayanacharya, the Superintendent of the Ayurvedic Pharmacy and has been examined chemically in the Chemistry

Department of the Benares Hindu University. The prepration seems to be the oxide of iron but has been found to possess the special magnetic property. This magnetic property has been tested by such an eminent chemist as Dr. S. S. Bhatnagar, D. Sc. (London), the Director of Chemical Laboratories, Punjab University, Lahore. It is really curious to find that the iron-oxide prepared by the method given above should possess this magnetic property specially when it has been subjected to so many treatments in the fire. This property is evidently due to the special treatment to which the iron is subjected. It would be in the interest of Ayurveda as well as humanity if the eminent Ayurvedic physicians of the country get their iron bhasmas examined to see if all such preparations possess this unique property of magnetism. If it is found to be so, the efficiency of this drug is evidently due to the special treatments to which it is subjected and this property could not therefore be acquired by drugs prepared by the ordinary chemical methods in the chemical laboratory.

It will also be very interesting if this preparation be examined physiologically and pathologically more carefully so that the efficiency of this medicine may be put on a scientific basis and it may be recognised world-wide by all.

Reports of Societies, etc.

REPORT OF
DIST. COUNCIL AYURVEDIC DISPENSARY, AKALTARA.
Dist. Bilaspur, C. P.

The Honourable Mr. E. R. Rao, the Educational Minister of C. P., performed the opening ceremony of this Dispensary on the 2nd Feb. 1928 in the presence of a large and distinguished gathering. Prominent among those were Mr. Rames Den, Dist. Magistrate, and the Civil Surgeon. The public and a large number of citizens of Bilaspur were also present. Thakur Chedilal, Bar-at-law, M. L. C., Chairman, Dist. Council Bilaspur, briefly sketched the gradual decay of Ayurvedic treatment and emphasised its existence in the present day not only as supplementary to allopathic or as an anachronism requiring every nerve of the Dist. Council to run it at any hazard, but beautifully brought out the success achieved by a similar sister institution at Drug.

It has been constructed at a cost of Rs. 10,000. It forms an imposing and magnificent sight and is one of the finest buildings in Akaltara.

In [illegible] Road at a short distance from Akaltara [illegible] Station. The Dispensary building is a pucca one, well built and well equipped with required furniture. The different departments are well [illegible] separate.

Here both the surgical and medical cases are treated, but for the former cases allopathic medical aid is taken. There is no arrangement for [illegible] patients.

It creates a very peculiar position for the medical officer as patients requiring regular and serious attention cannot be admitted. A heart finds itself pinched and squeezed among narrow circumstance.

Here is a small garden in the compound where medicinal herbs necessary for *Anupans* are planted. Its extention is possible, but the hard soil and scarcity of water are difficult problems to tackle with.

There is a pucca well in the compound. A sum of Rs. 200 vested in the well would surely be able to meet the scarcity of water, a necessity felt very acutely in summer.

The Medical Officer's quarter is a contrast to the main building which requires urgent extension.

The other building serves as a Pharmacy. Most of the medicines distributed to patients are the preparations of this pharmacy.

The medical officer and the compounder cannot get spare time for pharmaceutical works due to the rush of patients. So some of the medicines which require long time for preparation are called from other pharmacy.

The Dispensary is maintained by the District Board. The sum allotted for 1928—29 for medicine is Rs 700.

This sum as compared to the number of patients and the nature of cases treated is inadequate. The public of Akaltara subscribes but nominal sum which even they fail to pay regularly.

Raja-Sahib of Chandrapur had donated a sum of Rs. 500, for an operation table.

The Board is requested to supply Ayurvedic paper and some authoritative books on Ayurveda for reference to Dispensary Library.

As the compounder has to do both the surgical and medical duties including medicine preparation, office works, he has to devote his whole time in the Hospital work, so the Board is requested for the increment of his pay.

Total number of patients treated from February 1928 to March 1929 is 22028.

Old patients.	New patients	Daily average.
11494	8334	52·4

Expenditure per head 6 pies.

Statement showing the operations performed at Akaltara Dispensary in 1928–29.

Class and nature of operations.	No. of operations
Bubo and Abscess	77
Removal of foreign bodies from nose and ear	5
Tooth extraction	29
Dislocation and fracture ...	7
Snake bite	1
Dog bite...	3
Rat bite	1
Pig bite	1
Retention of urine	2
Stitching of torn ear and nose ...	3
Total ...	129

Statement showing serious and interesting medical cases treated in Akaltara Hospital from February 1928 to March 1929.

Name of Disease.	Cured.	Died.	Left treatment.	Total No.
Pneumonia & Broncho P. ...	8	1	2	11
Peurpural fever ...	3	1	1	5
Typhoid fever	1	0	0	1
Choleric Diarrhœa ...	10	1	0	11
Paralysis of lower extremities	3	—	15	18
General Paralysis ...	1	0	4	5
Dropsy ...	10	1	4	15
Ascites	0	0	2	2
Pernicious anæmia ...	6	1	1	8
Worms	29	1	1	31
Scorpion-bite	24	0	2	26
Cholera	0	1	0	1
				131

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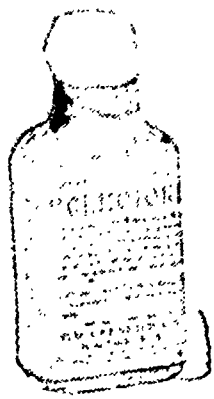

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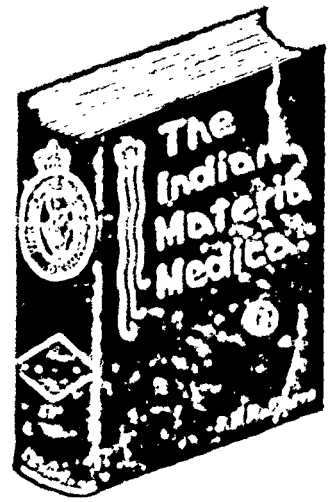

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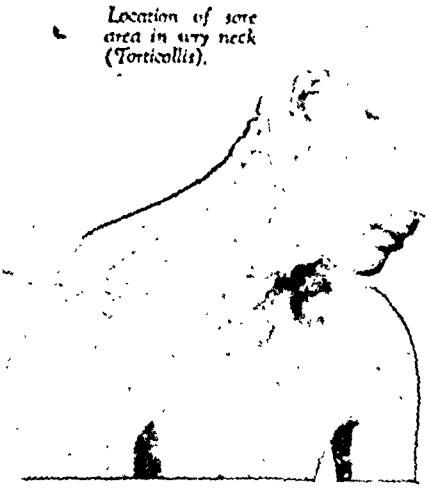
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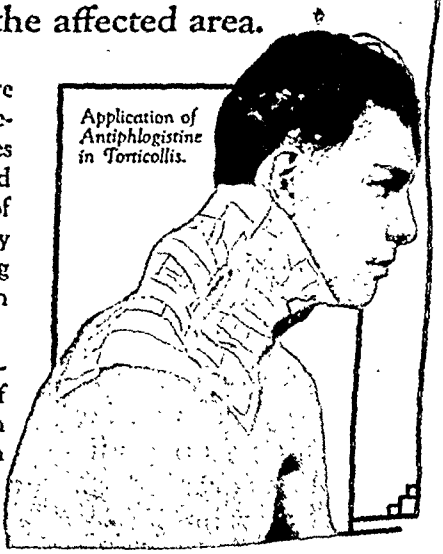
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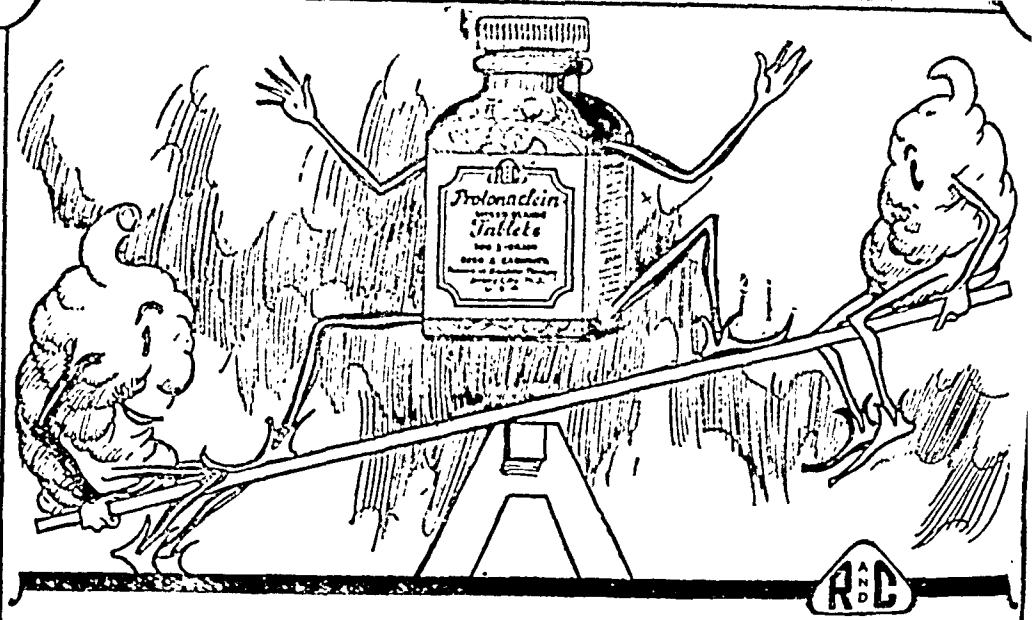

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Presidential Speech

OF

Dr. B. C. Roy, M.D., F.R.C.S. (Eng.), M.R.C.P. (London),

AT THE

ALL INDIA MEDICAL CONFERENCE,

LAHORE.

FRIENDS AND COMRADES,

I thank you most cordially for having given me this opportunity of talking to you about the future of the medical profession in India. I regret, on account of pre-occupations and the shortness of time, my address is apt to be discursive. You will perhaps find that I have left out many things I should have mentioned and I ask your indulgence and help in filling up the lacunæ.

The All-India Medical Association, as you are aware, was established for the purpose, amongst others, of organising the members of the medical profession in order "to secure the promotion and advancement of allied sciences, maintain the honour, dignity and the interests of the medical profession and secure the co-operation between the members thereof." In pursuance of this object we have met this evening to consider the various problems affecting the profession as well as the various laws already enacted or legislative measures about to be adopted, which might seriously affect the medical profession, medical education or the health of the peopole of this country. Its membership is open to persons having registrable qualification in India or "persons who have such medical qualifications as may be from time to time

recognised by the Association suitable for such membership." We want to bring together and organise the whole profession, not merely those who profess and practise a particular system of medicine. Our purpose is to secure co-operation amongst all persons whom this Association may consider suitable for membership. Should we restrict the membership to such persons only as follow the western system of medicine or open the door to all those who have, in different parts of the country, practised any other system with repute and success? If we take medicine merely as a science it may be argued that only those who are trained on scientific methods prevalent in the west should be eligible to be members. But to my mind it is taking a very narrow view of the whole matter. On the other hand, if we define science as a systematised branch of human knowledge we cannot ignore other systems. I have no doubt whatsoever that there was a time when the ancient practitioners in medicine—those who elaborated the Ayurvedic System centuries ago—possessed accurate knowledge of the nervous system, of the vascular system, of the changes in pulse in different diseases and their knowledge of pathology, such as we understand it, was of high order. Speaking in the Imperial Legislative Council 1916, Sir Pardey Lukis, the then Director-General said:—"I resent strongly the spirit of trade unionism which leads many modern doctors to stigmatise all Vaids and Hakims as quacks and charlatans. We Allopaths are just emerging from the slough of empiricism. The longer I live in India, the more intimate my connection with Indians, the greater will be my appreciation of the wisdom of the Ancients and the more will I understand that the West has still much to learn from the East." Other eminent observers also have spoken in a similar strain. Therefore it is not for us to cut off from the past system but it is necessary to resuscitate them, to develop them. If we desire to do so, we cannot afford to keep out the Vaid and

the Hakim. We cannot ignore them. It is true that the knowledge in those systems has been handed over from father to son in the form of Sutras, which were committed to memory. The result was that the bulk of information was compressed into a small compass. In the process of transmission the links are gone, the original is mutilated, accretions have gathered, evidence or data on which the conclusions were founded are missing. What we are left with now are dogmatism and perhaps empiricism. On the other hand, if we regard medicine as an art of healing, who is there so bold as to say that the art is the exclusive achievement of one system. Considered thus, the claims of those not practising the Western system to be included in the group of medical practitioners becomes almost irresistible. I would therefor desire to see included in this Association members who honestly believe in his own system and practises it with a sincerity of purpose.

When we organise or attempt to organise any group of people we do so both for the purpose of attacking and defending. Problems connected with the health of the citizens of this country, with the means of preventing diseases and spread of epidemics, with the method of generating a sanitary consciousness amongst the masses of this country are items which are to be attacked with determination, courage, resourcefulness, hope and faith. On the other hand every one of us realise that we the medical practitioners in India are the victims of circumstances and designs which are inimical to the growth of the profession and we have to defended ourselves against them. In the domains of medical education, medical research, medical relief or prevention of diseases, determined and systematic efforts have been made in the past to keep us in a perpetual state of inaction and stagnation. We are told that our education is defective, have no original research to our credit, that our ability to provide relief in diseases is of an inferior order, that we cannot administer institutions

established for the purposes of affording such relief, that we cannot initiate and successfully carry out schemes for the prevention of diseases. Assuming for the purposes of argument that this is so, it may pertinently be asked who are responsible for such a state? So far as the members who practise the western system are concerned, it is clear that the present unsatisfactory condition could only be due to one of two causes. Either the soil was so bad that no crop could grow in it or the tiller was so careless or ignorant that he did not care or he did not know how to achieve success in his work. Who are responsible for the training of our youths in medicine?

As far back as 1912 and 1913 the members of the Indian Medical Service gave evidence before the Public Services Commission that "the standard of medical education in India is low and that the Indian practitioner is unpractical, that the British schools are far more efficient than Indian colleges" and yet in the year 1913 out of 24 appointments in the Indian Medical Service 8 Indians got in by competition and in 1914 out of 35 such posts, 14 were secured by Indians.

We have been blamed because there is no record of research to the credit of the Indian medical practitioner. What is the real root cause? Are Indians incapable of research? Sir J. C. Bose, Sir P. C. Roy, Sir C. V. Raman. Dr. Meghnad Saha, Mr. Ramavajan have won world-wide reputation in research without any guidance or tuition from Westerners. Why cannot the Indian medical practitioner equally succeed? In the case of medical research it is necessary not only to be provided with laboratories but hospital facilities also have to be secured. Till within recent years all the larger hospitals in the country were manned by members belonging to the Indian Medical Service. All the research appointments were and still are being held by the service officers. The process of exclusion has been carefully, may I say shamelessly, planned and manipulated that even no Indian

of established repute has any chance of getting into the group. As regards the management of large hospitals and institutions, the question of the inefficiency of Indians does not arise, because no opportunity was given to Indians to manage any of the hospitals. The indisputable fact remains that inspite of such obstructive methods and in spite of the handicap due to paucity of funds, two large institutions, one in Calcutta and another in Bombay have developed and managed entirely under Indian supervision. It is a decisive argument against the charge of inefficiency attributed to Indians. Studied carelessness on the part of I M. S. officers in discharging the responsible duties cast upon them, namely, that of developing an Indian Medical Profession, the pre-arranged method of keeping the Indians out of every opening where they could develop themselves, have been responsible for the present state of affairs. Knowledge gives vision to the blind. But perverse attempts have been made to perpetuate the infirmity.

Whatever may have happened in the past, we have now reached a stage when we, as members of the medical profession in India, desire to fulfil our mission, to develop ourselves and to realise the hope with which we have adopted the career of a physician. We are prepared to profit by the knowledge from the West, but not under conditions in which it engenders hatred for what is Eastern. I am happy to say our goal is getting clearer, that our vision is getting less obscured, that our self-confidence is being restored and the whole of medical profession in India is being linked together by a common bond of faith and hope.

Most of us have been trained in the Allopathic system. Let us frankly admit that our teachers have not given us that broad outlook, that deep insight into the medical lore which every teacher ought to inculcate in his pupil. Why do I say that? There is a simple test. No professor belonging to the Medical Services has, ever to my

knowledge, trained an Indian student in such a way that he may prove capable in time, of occupying the chair of his teacher. It has all along been a process of safeguarding the interests of a trade union. In order to reserve the posts for the Services, it has happened, that the very same professor has taught subjects like hygiene, chemistry, physiology, surgery, ophthalmic surgery in different periods of his service in India. We cannot conceive of a more monstrous method of imparting medical education in any country. A complaint was made by some I. M. S. Officers before the Public Services Commission that in India specialisation in any medical subject was unknown. Who is responsible for this ? How can we expect anything else from those teachers who have developed only one form of speciality namely, the speciality of possessing an overweening self-confidence, the speciality of rejecting all claims of the Indian practitioners to fair treatment, the speciality in belittling everything Indian. The irony lies in the fact that while condemning the Indian practitioners the I. M. S. Officer forgets that he is condemning himself, that he is hoist with his own petard. We know we have been wronged in the past. We do not desire to depend on others. We therefore desire to utilise such powers as the Universities and the Councils of Medical Registration in different Provinces have given us, for the purpose of developing medical education in our own way. It is unfortunate that interested parties have clouded the issues by requisitioning the powerful aid of the General Medical Council and the British Medical Association in condemning our attempts at developing in our own way. The General Medical Council shamelessly rejects recognition of the Indian degrees particulary that of the Calcutta University while they dared not do the same with regard to the London and Cambridge Uuiversities when they failed, even so late as 1925, to give the requisite number of 20 labour cases to each student before appearing at the examination.

Within recent times you must have noticed in the newspapers the attitude of the General Council towards the Indian Universities. It is desirable I should go into this question a little in detail in order to show what this attitude has been. Previous to the enquiry by the General Medical Council, the appointment of the Public Services Commission in 1913 and the Medical Services Committee in 1919 afforded opportunities to the Indian Medical Service Officers to condemn the Indian practitioners. Why did they do so? Did they forget that the I.M.S. had full control of the education of our youths for over half a century? The peculiar methods adopted by the General Medical Council in its enquiry regarding medical education given by the Indian Universities cannot but point to one conclusion, namely, that the President and the Executive Committee of the General Medical Council have been to a great extent influenced in their decision by "*exparte*" information obtained from interested sources and that they acted as partisans and not as judges. I will quote two examples in support of this contention of mine. The General Medical Council opined in 1921-22 that the training in midwifery in Indian Universities was not upto the mark. Similar enquiries have been made with regard to examinations held by the licensing bodies in England. Dr. Comyns Berkely in his address delivered in 1926 at the Centenary Congress of Combe lying-in hospital said that he had ascertained to what extent Council's latest recommendations had been complied with upto 1925. He found that a large number of schools had failed to comply with the recommendation of the General Medical Council. What recommendations the General Medical Council made to the Privy Council one cannot say but the fact remains that as a matter of "public policy" no steps were taken against them particularly against the Universities of London and Cambridge. It may pertinently be asked whether the General Medical Council recommended for

the withdrawal of the authority for holding qualifying examination in the case of these Universities? If not, why not? Why this differential treatment meted out to Indian Universities? Have the General Medical Council no control over the Universities in England? Is it not a fact that under Part (1) of the Act of 1886, the General Medical Council is to "secure the maintenance of efficiency in the English Universities?" Not only can the Council withdraw recognition of the degrees granted by the qualifying bodies but they can also represent to the Privy Council the desirability of withdrawal from such bodies of the right to hold qualifying examination. Why was it not done in these cases? I will now quote the second example to show how biased the General Medical Council had been in its treatment towards Indian Universities. 'The Council has been from time to time representing to the Government of India and to the Universities that in order to fulfil statutory obligations they claim a right to send Inspectors for inspecting examinations of the Indian Universities. They had actually inspected many of the schools and colleges in India. Instead of working as a partner, with whom reciprocal relations had been established, they have been attempting to guide, control and direct medical education in India. They have examined the curriculum of studies, they have commented upon the staff and the provisions for instruction of the different institutions in India. When the Calcutta University applied for recognition of its degrees in the year 1890 under Act 1886 Part (2) Mr. Lyall of the Government of India sent back the application to the University asking "for details regarding the degree of knowledge and skill required by the statute for granting the various diplomas." The then Registrar of the Calcutta University Mr. Nash wrote on the 15th of October 1890 that "It appears to be unnecessary to enter into details regarding the regulations" and he referred to the pages in the printed regulations where the syllabus was given. The information

obtained from the University Regulations of 1890 justified recognition by the General Medical Council and the University was recognised on the basis of this application in 1893. After 30 years the General Medical Council wrote to the Calcutta University saying "that from the information at present in its possession, the Council is unable to recognise for the time being the medical diploma or diplomas of the Calcutta University." Did the Council communicate to the University the nature and source of such information which justified withdrawal of recognition? It is true that in the years 1920 and 1921 the Council wrote to the University asking for information regarding the training in midwifery. It is also true that the Indian Universities, in common with the bulk of the licensing bodies in England, had not enough clinical materials for the teaching of midwifery in accordance with the recommendations of the General Medical Council. But there was no information before the University to indicate that the standard of training in subjects other than midwifery had so deteriorated since 1893 as to justify an enquiry by the Council. When in 1924 Col. Needham wanted to inspect medical examinations, the University refused permission. Four years before this, the University had to refuse the request of the London University to supply answer papers and other details regarding Matriculation Examination and they could not do otherwise with regard to the medical examinations. What right had the General Medical Council to inspect the examination in order to continue recognition? Were not the reports and the syllabus published by the University enough? Did they ask for more in case of Japan and Italy and Australia, whose degrees were also recognised under the provision of the said Act? New Zealand passed an Act in 1924, which laid down that no one was allowed to practise in that country unless they passed a qualifying examination held in it. This was done as a measure of protection against foreign competition. The General

Medical Council wrote a letter conveying a threat regarding cessation of reciprocity with that country but had to climb down subsequently. They wrote to the Chairman Medical Council to New Zealand as follows :—

"The General Medical Council have no *rights of inspection or visitation of examinations* held outside Great Britain and Ireland but in many cases for instance, in Australasia, the professors and other authorities concerned are well known in this country and their records are sufficient to guarantee that the work of standardisation they undertake will be well done. The Council examine the *regulations of the several bodies and taking into account the standing of the teachers and examiners recognise themselves which seem to imply a standard of knowledge which is not lower than that required in this country.*" In this letter the Registrar goes on to say that with regard to Italy and Japan also the Council recognise degrees given by the Universities in those countries after careful consideration of the regulations. What can account for a different attitude of the General Medical Council, regarding Indian Universities ? The reason given is that "the staff of many Universities is *now largely composed of Indians of whom many have not studied out of India.*" A serious condemnation of the system which has existed in India under the control of the Indian Medical Service for the last sixty years. Within recent times a large number of our graduates have gone to Europe, America and England and obtained distinction and high degrees. Could it be said that the standard of attainment of the average medical practitioner in India today is lower than what it was in 1893 ? I do not pause to question the motives of those who want to belittle the value of the degrees conferred by the Indian Universities to-day. New Zealand had broken off, so have Quebec, Ontario, New Brunswick, etc. Where reciprocation ended, retaliation began. I find in this attitude of the Council "a blessing in disguise." It has shaken us up wakened

us. We were lying stunned, hypnotised. We are now conscious of our helplessness. I trust it will rouse us to action. The withdrawal of recognition and the difficulties of getting into the colleges in England have led a large number of students to go to Continental Europe. When they come back they are naturally enamoured of Continental instruments, machine, appliances and methods. India imports about 2 crores of Rupees worth of goods and stores. Who bring them? We. Who use them? We. Situated as we are we cannot retaliate as New Zealand has done. But is it difficult to organise ourselves, in the interest of the profession for the purpose of counteracting malicious attacks on our graduates? Can we not withdraw in a body our orders on British firms so long as the present attitude continues? It is for you to consider this and discuss the details. But mere retaliation wont develop us. We desire no interference from outsiders while we are setting our house in order. We do not want an Inspector sent by the General Medical Conncil. But we desire the fullest enquiry by ourselves into the methods of teaching in the different Universities. We desire the fullest co-ordination amongst them. We want to raise ourselves in our own estimation and the world is bound to respect us inspite of the detractors.

I now come to the subject of Research. Sir Norman Walker in his report to the General Medical Council said :—"India occupies a prominent position in the matter of research. But it is greatly to be desired that research should be active in many centres, notably the Universities. Where the professors are actively engaged in research, the students' interest in work is similarly stimulated. Young graduates have opportunities at their doors instead of having to seek admission to the three or four existing research departments. One hopes to see research extended in the scientific and medical laboratories at an early date." Major Bradfield was sent by the Govern-

salaried subordinate is entirely under the thumb of his superior, not only with regard to routine work but also in matters which demand initiative. His mental vision is restricted. It is thus that the I.M.S. men have secured a cultural conquest on their subordinates. But with what result? It is true that these hospitals manage to dole medical relief just as the system prevalent in 1835. But is the staff sufficient to manage these hospitals on the latest approved system? Tons of clinical materials go waste in every hospital while the bulk of our graduates are not allowed to take advantage of them simply because the State cannot pay them and the controlling authorities won't have them. India is said to be the land for research. But an insurmountable Chinese Wall has been built round every available centre of research and yet comes the thundering indictment, "Thou hast been found wanting." There is however another aspect of the question. The people who come to the Hospitals have a right to demand the full measure of attention and treatment based on the result of the latest scientific researches. The people have a right to demand that the students who are taught in these public Schools and Colleges should have opportunities of gaining experience and skill by being allowed to work in the Hospitals. It is only necessary for you and me to get the people on our side and all will be well. I can assure you, gentlemen, the die is cast heavy in your favour. Awake, arise and march forward.

I have heard it said that the I. M. S. is a reserve for military service. I have seen the past and recent communiques of the Government of India and of England. I have noticed that one Secretary of State lays down a scheme only to be nullified or superseded by his successor. We all know that promises made have been shamelessly broken. Let us not bother about them. Let us be content that we have wrested the bulk of the civil practice from the I. M. S. I do not desire to enhance the

communalistic spirit in the profession but while it is there, we should insist on the units, in the Indian Army, at least, being treated by Indian members of the service. If it be conceded for one moment that the European needs his own countrymen for his treatment, may not 50,000 people insist on getting their own countrymen to treat them, unless it is maintained, as a famous Private Secretary of a famous Governor once said to me in discussing this problem : "We can manage to govern very well without the 50,000 Indians but not without the one European."

I now pass on to the third item which I proposed to deal, namely, the fight against diseases, provision for medical relief and the prevention of diseases. It is a sad spectacle to see that while during the last 10 years the birth rate in India varied between 35 to 39 per thousand of population, the death rate varied between 26 to 32 per thousand. If we compare these figures with those of other countries in the world, we find that during the last ten years the death rate in England has been reduced from 16 per thousand to 11 per thousand, in Germany from 19 per thousand to 11 per thousand, in France from 20 per thousand to 17 per thousand, and in Italy from 22 to 16 per thousand. Going into the details we find that in England in 1901, the death rate from enteric fever was 11·3 per hundred thousand deaths, in 1926 it was 9 per hundred thousand ; Tuberculosis came down from 174 per hundred thousand to 96 per hundred thousand, Diarrhœa and Enteritis from 92 per hundred thousand to 21 per hundred thousand. When we come to the preventable diseases in India we find that 230 persons per hundred thousand die of preventable diseases like Cholera, Small Pox, Plague and Dysentery. On the other hand, the infant mortality-rate in India is as high as 250 per thousand births. In England, it is 78 per thousand births, in Germany it is 132 per thousand births and in France 103 per thousand births. A question therefore naturally arises, can nothing be done to prevent this enormous loss of man power in India, for it must be remembered that of every 100 persons who suffer from Cholera or Kala-Azar, although 2 per thousand may die,

large numbers are maimed for life? It is for you to come to a decision regarding a method to be adopted for preventing diseases. It is not necessary for me to mention that the history of the Government during the past 100 years has been such that we need not look for help or inspiration from the authorities. If we mean to do anything we shall have to do it inspite of the Government. We must organise ourselves. Voluntary organisations have to be formed for social service, for giving aid during epidemics, for rousing sanitary consciousness amongst the masses.

I could deal with various other problems in which the Association may be interested. The problem of educating and supplying Indian nurses for our hospitals, the adoption of steps to prevent the indiscriminate use of drugs and intoxicants, the question whether medical education should be of two grades or one, whether it is desirable to train students for the purpose of creating a public health service, these and many other problems will be before you for solution, either during this session or during the ensuing year. But there is one question which has been asked often and which I desire to deal shortly before I conclude. It has been asked whether a member of the profession should interest himself in any matter outside the four corners of his professional life, whether this Association should take up matters which, in common parlance, are dubbed political. Gentlemen, I have very definite views on this question. In India, we have never regarded the various affairs of life as being in water-tight compartments: Politics, technically so called, is intermixed with economical, social, and medical problems. If politics means the science of organisation for the purpose of securing the greatest good of the largest number, I declare, we members of the profession dare not keep away from politics. If by a politician, we mean, in the words of Milton, a man of "Cunning," our profession is too noble, too altruistic to allow us to be so. No, gentlemen, we have nothing to do with him. In the present state of your country, I entreat you to organise yourselves. In any steps you take, beware of pitfalls, act in an organised way, for let us not forget the famous words of Abraham Lincoln: "Brethren, let us hang together or else we may hang separately."

Original Articles

THE NERVOUS SYSTEM OF THE ANCIENT HINDUS

BY

ASHUTOSH ROY, L.M.S., (Hazaribagh)

—:o:—

PREFACE

The Nervous System had been studied by the ancient Hindus very minutely as to the course and relation of its various parts anatomically and as to its functions, physiologically and metaphysically, mainly in connection with the *Hindu Yoga System*, during the *Tantric period* of Indian history (1100-1300 A D.). The descriptions are often allegorical and not quite accurate, when compared with those of modern anatomy, and various metaphysical functions are ascribed of which we modern ers are quite unaware, for modern medicine has not studied its functions in details in the higher intellectual and mental spheres. But what strikes us with wonder is that the ancient Hindus at such an early period tried to study this most delicate and intricate system of the human body scientifically. By their successful practice of *Samadhi* or voluntary suspension of animation, of which we have authentic records, they have shown that the involuntary organic autonymic portion can be controlled at will, a fact undreamt of by us. Even modern medicine, with its animal experiments, its delicate staining methods, its post-mortem records could not fully study the functions of its various parts, for example the big silent area of the brain and that in the spinal cord. The anatomical knowledge derived from the dissection of the dead in which the finer nerves shrink and are often torn during the manipulation and finer anatomical connection may be undetected or overlooked. Thus the fibre of Reissner has only very recently been detected. Time will show whether the conclusions of the ancient Hindus are correct in every details or otherwise.

INTRODUCTION.

The Nervous Systen of the ancient Hindus has been very briefly touched upon in earlier Ayurvedic books. The subject has however been dealt with more elaborately in books on "Hindu Yoga System," specially the later Tantrik books, for the Nervous System of the Hindus forms the physiological basis of their "Yoga System." Without a clear conception of the structures of the Nervous System, their localisation in the human body and their functions, both physiological and metaphysical, it is impossible, says "Hindu Yoga System" to study "Yoga" or practise it successfully. The subject is therefore interesting alike to students of medicine (Eastern and Western, ancient and modern) as well as to those of the "Hindu Yoga System." Some later minor *Upanishads* also discuss some aspects of the subject.

Thus Dr. Brojendra Nath Seal, while discussing the various Nerves as described in "Tantrik books" remarked that "the enumerations of the spinal Nerves with the connected sympathetic System is a distinct improvement on the old Ayurvedists." (Prof. B. N. Seal, Positive Science of the Hindus.)

Discussing the location of the soul, Justice Ranade remarked that the Upanishads located the soul generally in the heart as Aristotle had done. But it is interesting to note that in the "Taittriya upanishads", there occurs the famous physiological description of "a nipple-like structure which hangs downward from the brain (the Pineal gland, the seat of soul of Descartes) and is regarded as the seat of the immortal being." Justice Rande therefore remarked that "later on with the development of the "Yogic or Tantrik literature," the central Nervous System came to be recognised and consciousness came to be referred to the brain and not the heart." (Ranade's Upanishads.)

While intellectual people regard the brain as the seat of the soul, emotional people (of the" Bhakti cult") regard the heart as the centre of the soul. The Hindu idea appears to be that the soul is located everywhere, in every living cell of which the organism is composed (in the tiny Nerve supplying the individual cell), the "cosmic soul" being encased by "Maya" in certain structures of the Brain, which is differentiated from the "micro-cosmic soul" in the organism. The object of Yoga is to make the mind one pointed towards God, so that the individual soul, vibrate in unison as it were, with the cosmic soul (the "Laya," or dissolution of Hindu religion).

There are many modern books on "Hindu Yoga System" but very few of them discussed the subject of the Nervous System from purely physiological basis. To co-relate the metaphysical with the physiological aspect in modern European language is very difficult and almost impossible, for the subject of the "Hindu Yoga System" is unknown to modern west. It is however admitted that "physiological and psycho-metaphysical phenomena run on parallel lines "by both students of medicine and students of modern philosophy.

Just as the "Tridosha Theory of Ayurveda" had been conjointly discussed in Ayurvedic books from different aspects, metaphysical, hormonal and humoral, so the various aspects of "Yoga," metaphysical, physiological and religious, had been conjointly discussed in those books of "Yoga" making the subject very confusing.

Sir John Woodroffe (Serpent power) has very clearly discussed the subject of "Yoga" from Psycho-metaphysical and religious aspects. He has also tried to co-relate the anatomy and physiology of the Nervous System as discussed in those ancient books with modern anatomy and physiology (of the West), but he admits that it is difficult to do so.

The writer has tried in this article to co-relate the physiology and anatomy of the Nervous System of the present day with those of the ancient Hindus.

The Nervous System had been discussed in "Yoga" books like "Shata Chakra Nirupanam," "Yogi Jagnabalkyam," "Paduka Panchakam" and others. Amongst modern books in English discussing the subject we may mention—

Prof. B. N. Seal's "Positive Science of the Hindus," Sir John Woodroffe's "Serpent Power," The Revd. Mr. Leadbeater's Chakras," and Dr. Rele's Mysterious Kundalini."

The Nervous System of the Hindus consists of :—

(*a*) The Nerves, cerebro-spinal and sympathetic, including the Nerves of special sense.

(*b*) The Chakras which may be subdivided into :—

(*i*) Subtle centres associated with the cerebro-spinal axis.

(*ii*) Gross centres outside the vertebral column which are associated with the sympathetic as well as the spinal Nerves.

The *Chakras* are Nerve-plexuses associated with ganglias as the sympathetic plexuses, without ganglias as the spinal plexuses. The *Central Nervous System* (brain and the spinal cord) is composed of a series of ganglias with fibres of Nerves, both centrifugal dnd centripetal.

The Nerves.

Fourteen nerves are specially mentioned in the Hindu "Yoga" books as the most important of the lot. These consist of Cranial Nerves, Spinal Nerves, Sympathetic Nerves and the Spinal Cord, of which again the two sympathetics and the spinal cord are considered the most important from "Yogic" point of view, the Sushamna or the spinal cord being considered the most important.

The fourteen nerves mentioned above are :—

(*a*) Cranial Nerves—seven only, as follows :
Jasasvini and Hastijihva
Pusa and Gandhari
Payasvini and Sankhini, Saraswati.

(*b*) Spinal Nerves—four groups, as follows :
Varuna
Visvodhara
Kuhu
Alambusa.

(*c*) Sympathetic Nerve chains :
Ida and Pingala

(*d*) Sushamna

This list does not include the Nerves of special sense which are as follows :—

	Rupabaha Nadi—	Special	Nerve	of	Sight
	Gandhabaha Nadi—	"	"	"	Smell
	Sabdabaha Nadi—	"	"	"	Hearing
	Rasabaha Nadi—	"	"	"	Taste
	Sparsabaha Nadi—	"	"	"	Touch
as well as	Monobaha Nadis—	"	"	"	General sensation
	Agnabaha Nadis—	"	"	"	Motion and organic action.

(*a*) *The Cranial Nerves.*

GROUP (1) Jasasvini and Hastijihva
Pusa and Gandhari

The above 4 Nerves distribute branches to the eye. They are probably the 3rd, 4th, ophthalmic division of the 5th and the

6th Cranial Nerves, each of which, says modern anatomy, receives a branch from the superior cervical ganglia of the sympathetic. They should not be confounded with Rupabaha Nadi or the special Sensory Nerve of Sight (Optic Nerve).

Nerve-supply of the Eye (Modern)

These are broadly divided into three following groups :—

(*a*) Motor Nerves.

(1) 3rd Cranial Nerve dilates pupil, supplies most of the muscles of eye ball except the superior oblique and the external Rectres muscles.

(2) 4th Cranial Nerve supplies the superior oblique muscle, which enables the eye to rotate downwards and outwards.

(3) 6th Cranial Nerve supplies the external rectus muscle, paralysis of which produces squint.

(*b*) Sensory Nerves.

(i) Optic or 2nd Cranial Nerve, the special Nerve of eye-sight.

(ii) First or Ophthalmic division of the 5th Cranial Nerve.

(*c*) Sympathetic Nerves—Branches from the superior cervical ganglia of the sympathetic, which contract the pupil. Four branches are given from this gangliated plexus to the 3rd, 4th, ophthalmic division of the 5th and the 6th Cranial Nerves.

GROUP (2). *Payasvini and Sankhini.*

The above two nerves distribute branches to the ear and are probably auricular branches from the 5th and 7th Cranial Nerves. They should not be confounded with the Auditory or 8th Cranial Nerve, the "Sabdabaha Nadis"—the special sensory Nerve of the ear.

Nerve supply of the ear (modern)

GROUP I.—Sensory and Sympathetic.

(*a*) The Auditory or the 8th Cranial Nerve, the special sensory nerve of the Ear, which is concerned in hearing.

(*b*) The Tympanic plexus formed by :—

(i) Jacobson's nerve—the tympanic branch of the 9th Cranial nerve.

Larynx (this is the object of "Jap" or prayer during "Pujah" or worship of the Hindus) and the lungs (this is the object of "Pranayam" specially "Kumbhak Pranayam" or a special form of respiratory exercise of the Hindus)

The immediate object of "Yoga" is to stop organic action, the climax of which is obtained in "Samadhi" (complete suspension of animation) so that all lesser forces arising from inside (organs) or from outside (our environments) are eliminated and the mind becomes one pointed (*achanchal*) towards God. This is called the "Union of Prakriti and Purusha"; when the "individual soul" vibrates in unison with the "Cosmic soul" (merges in it.)

Dr. Brojendra Nath Seal considers these nerves as all derived from the cervical plexus of spinal nerves (in the neck) receiving branches from the sympathetic.

(*b*) *Nerves of Special Sense.*

These are :

(1) Gandhabaha Nadis—special nerves of smell, olfactory or 1st cranial nerve.

(2) Rupabaha Nadis—special nerves of sight, optic or 2nd cranial nerve.

(3) Sabdabaha Nadis—special nerves of hearing, auditory or 8th cranial nerve.

(4) Rasabaha Nadis—special nerves of taste, Glossopharyngegal or 9th cranial.

(5) Sparsabaha Nadis—special nerves of touch, the Tactile nerves.

(*To be continued*).

THE IMPORTANCE OF BATHING IN AYURVEDA

BY

VAIDYA D. S. DEHADRAI,

Wardha (C. P.)

Ayurveda is such a science that it is ever inter-mingled with the holy sciences. It is not only a science of drugs but is far more useful in giving the rules for our daily behaviour. I am pretty sure that this holy science of Ayurveda was not practised on dead and lifeless bodies as in modern times, but our old and holy sages meditated and meditated for years together and came to their final conclusion after a great penance on the living soul and then only they gave us a very useful mode of behaviour. This is the only science which can cure the outward diseases and give rise to holy and pious thoughts inwardly, as it says—'पूर्वजन्मकृतं पापं व्याधिरूपेण बाध्यते' Now let us see how far it helps us in giving nice rules for our daily bath :—स्नानादि विधि :—

दीपनं वृष्यमायुष्यं स्नानमोजोबलप्रदम् ।
कंडुमल अमस्वेदतंद्रातृट्दाहपापनुत् ॥
रक्तप्रसादनं चापि सर्वेंद्रिय विशोधनम् ।
बाह्यैश्च शेकैः शीताधैरुज्जांलर्यतिपोहितः ।
नरस्य स्नातमात्रस्य दीव्यते तेन पावकः ॥
प्रातःस्नानमलञ्च पापहरणं दुःस्वप्नविध्वंसनम् ।
शौचस्यायतनं मलापहरणं संवर्धनं तेजसाम् ॥
रूपधोतकरं शरीरसुखदं कामाग्निसंदीपनम् ।
स्त्रीणां मन्मथ गाहनं अमहरं स्नाने दशैतेगुणाः ॥
शीतेनप्रयसा स्नानं रक्तपित्तप्रशांतिकृत् ।
ततेवोष्णेन तोयेन बल्यं वातकफापहम् ॥
उष्णांबुनाऽधःकायस्य परिषेको बलवहः ।
तेनैव चोत्तमांगस्य बलहृत् केशचक्षुषाम् ॥
शिरःस्नानम् चक्षुष्यमत्युष्णेनांबुना सदा ।
वातश्लेष्मप्रकोपेतु ज्ञात्वा व्याधि बलाबलम् ॥
काममुष्ण शिरःस्नानं भैषज्यार्थे समाचरेत् ।
अतिशीतांबु शीते च श्लेष्ममारुतकोपनम् ॥
अत्युष्णमुष्णकाले च पित्तशोणितवर्धनम् ।
यः सदाऽमलकैः स्नानं करोति स विनिश्चितम् ॥

वलीपलितनिर्मुक्तो जीवेच्छरदां शतं नरः ।
अशीतेनांभसा स्नानं पथः पानं युवः स्त्रियः ।
एतद्धि मानवाः पथ्यं स्निग्धमल्पं च भोजनम् ॥
स्नानं ज्वरातिसारे च नेत्रकर्णाक्षिरोगिषु ।
आध्मानपीनसाजीर्णभुक्तवत्सु च गर्हितम् ॥
स्नानस्यानंतरं सम्यग् वस्त्रेण तनुमार्जनम् ।
कांतिप्रद शरीरस्य कंडूदुर्गंधीपनाशनम् ॥

To take bath is for washing the bodily dirt ; the skin which is outwardly seen as a plain thing consists of thousands of pores and perspiration is coming out from them. Through this perspiration the bodily dirt is thrown out ; and to wash this dirt, bathing is quite necessary. Those who do not take bath take the responsibility of saturating the dirt on their body, thus getting skin diseases like scabies, ringworm, eczema, etc. The nerves and arteries are refreshed by bathing and thus free circulation is being carried on, bringing happiness and new energy in the system. As the blood circulation is vigorous, naturally it helps good digestion. To take bath just in the morning is considered holy and righteous, because we get free circulation and energy after the night's rest. Suppose a man takes bath after he has walked 5 or 10 miles, in that we will see that his blood supply, instead of his whole body, which was more at the feet, will be set right.

Now let us see as to who should take warm and who cold bath. Those who have heat more in the system and are suffering from skin diseases should ever take the cold bath and every body should take cold water to wash the portion above the neck as it keeps cool the eyes and brain.

Those who do not tolerate cold water should take the warm bath and in winter season, especially, every body should take warm bath ; but in hot season, cold bath is quite necessary.

Now those who are suffering from fever, Diarrhœa, eye disease and ear disease, flatulence, colds and indigestion should never take bath ; also none should take bath after they have taken their meals.

For Hindus there is no use of enumerating the importance of bath as they do it as their duty according to the instructions of their religious sciences ; but for other than those (Hindus) I would like to advise bath at least once a day to keep their body clean and allow free perspiration.

OBITUARY

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LATE BOTANIST JAYAKRISHNABHAI

By the death of Mr. Jayakrishna Indraji Thakar, the veteran Botanist of Kathiawar and Gujrat: India lost one of her patriots, least recognized and least appreciated and the Ayurvedic Practitioners of Kathiawar and Gujrat an always ready genius, nay an authority on botanical problems confronting them in the identification of oft-disputed vegetable drugs. The sad event took place on the 3rd December, 1929 in Cutch, the country which is proud of his birth. He died at a comparatively advanced age of four scores and three. The death of one of his dear daughters told heavily upon the aged Botanist and the sorrow thereof drew near his end.

A Girinara Brahmin by caste, he was born and bred up in straitened circumstances. He could hardly get what we call liberal education in its usual sense and had to begin with the world rather in awkward environments. What was said of Thomas Love Peacock, the English novelist, is equally applicable to him. "In his desultory youth he acquired a learning for which he was indebted neither to public school nor to university, but the proof of which is written in many a page of his works." The honour of first initiating him into the study of Botany and indigenous plants goes to Pt. Bhagwanlal Indraji, Ph. D., the ever lamented antiquarian scholar of international renown. Later on he was introduced to the late Dr. Sakharam Arjuna, the then famous Botanist of Bombay and carried on his study with dogged perseverance under the guidance of this doctor. He also got into touch with the late Mr. Campbell of Bombay and availed himself of the botanical knowledge and experience of the latter. Though his English education did not go beyond the fourth standard, he grasped, by dint of sheer exertion, all the technicalities of Botany and allied subjects like Ayurvedic Nighantoos, etc. with theoretical and practical efficiency, by no means inferior to that of an average botanical graduate, having academic credentials at his back. And by genius—that transcendent capacity of taking trouble according to Carlyle—he was second to none in his subject of choice, inspite of his meagre school education. It is no exaggeration, if it is remarked, that he was the Father of Botany or the Lenius in Kathiawar and Gujrat

to quote the words of his favourite disciple, in as much as he was the first to deal with Botany exhaustively as well as scientifically in vernacular as opposed to English and to instil into the mind of the Gujrati-knowing population the importance of this much neglected science. By the influence and recommendation of his English friends like late Chester Macnaughten M.A., the then famous Principal, Rajkumar College, Rajkot, Hon. H. M. Birdwood M.A., L.L.M. (Cantab), the then judge of Bombay, and others, he was appointed Curator of forests and gardens in the Porbunder state, at that time under the historic administration of Sir F. S. P. Lely, I. C. S. etc. When he did not like the idea of prematurely leaving off his study under the auspices of late Pt. Bhagwanlal and Dr. Sakharam, Sir Lely said to him, "Well, never mind, we have given you a congenial work, I think. Please do your work and you will find an interest in it. Your knowledge of plants should now be put to some practical and useful work." Really he put his knowledge of plants to commendable 'practical and useful work' by bringing out the 'Vanaspati Shastra' or 'A Complete and Comprehensive Account of the Flora of Barda Mountain (Kathiawar), the only work of its kind in Gujrati and the masterpiece of the author from botanical, economical, industrial, and medical view-points. Late Lt. K. R. Kirtikar and Dr. Bhalchandra praised the work in glowing terms; while the latter considered it as a standard work on Indian Botany in Gujrati. By the bye it must be remarked without any fear of contradiction that the Porbunder State had had no mean share in making what Mr. Joyakrishna was; for the State had equipped him with all available literature on Botany necessary for the advancement of his knowledge. In the same vein the Cutch State is to be congratulated upon having patronized the son of the soil in his after life. After he took his pension from the Porbunder State, his services were utilized by the Cutch State, as said just now, and there too he brought out his another famous work 'The Flora of the Cutch State (Gujrati). Both the works evince originality and patient labour continued for years and reflect no small credit upon the author. He was the first to be inspired by and to act according to the immortal words of the famous field botanist, Mr. F. Gell, "By Natives of India alone can Botanical science be pursued in India with the same success which has attended the efforts in this direction of Europeans in Europe." It is an irony of

fate that, owing to lack of appreciation on the part of Gujrat, many illuminating works did not come from this dynamic force. According to the opinion of his several Indian and English friends and admirers including Sir Leslie Wilson, ex-Governor of Bombay, had he written his two authoritative works on Botany in English instead of his mother tongue, they would have been much more appreciated and would have enriched the author to a great extent. To this plausible argument the august Botanist in his characteristic style replied that there was no dearth of English books on Indian Botany and his sole endeavour was to educate his countrymen in their own mother tongue and not to amass wealth thereby. These words unequivocally testify to his patriotism, self-sacrifice, and noble-mindedness.

Even in his advaced years and subsequent physical breakdown, he contributed to the 'Vaidy-Kalpataru' and the Ayurveda-Vijnan,' the leading Ayurvedic monthlies in Gujrati and tried all his best to be of service to all interested in the subject in various little ways. His original researches with respect to the genuine identification of several indigenous Ayurvedic drugs, compatible with the findings of ancient Nighantoos, are either generally accepted or on the way to acceptance by many Ayurvedists. Moreover they have undoubtedly generated a spirit of research among the Gujrati Vaidyas. Among his disciples may be mentioned Vaidya R. J. Trivedi, Editor of the the Vaidyakalpataru and proprietor of the Gujrat Ayurvedic Pharmacy, and Vaidya B. G. Shah, author of the Nighantu Adarsha. Ayurvedic scholars like Vaidya A. P. Pattani, Principal, U. P. Ayurvedic College and Mr. D K. Shastri, Editor of the Ayurveda-Vijnan have been influenced by him, so far as Botany is concerned. The present writer had once the opportunity of seeing and hearing him at Patan in 1925. He was simple in manners, unostentatious in speech, and above all airs, aloofness, etc. so intermingled with exuberance of knowledge.

Devout as he was, it was through the philosophy of plants and plant-life that he tried to realize the divine power of the Almighty. Botany was to him the alpha and omega of his life: "the solace of his life and the solace of his death." He did translate into action the sober words of late Justice Ranade, "no man can be called great who has not to the last hour of his life fulfilled the responsibility which greatness implies." *Finis coronat opus!*

Let us see how Gujrat perpetuates the memory of a self-sacrificing genius!

May his soul rest in enternal peace and inspire every one of of us with that noble spirit which he has bequeathed to our countrymen! Amen!

VAIDYA BHANUSHANKER P. SHASTRI,
Ayurvedic Practioner, Limbdi (Kathiawar)

Health and Hygiene

THE RAT MENACE

Reservoir of Many Diseases

The rat has followed man every where and has both the wit and the means to adapt itself to all climates and conditions. No other wild animal is cosmopolitan. and only a few domestic animals have a world wide distribution, writes "The Red Cross"

Some rats are born, and live their entire lives in cold storage refrigerator plants where the temperature is never above freezing, while others find congenial homes in the hottest parts of the tropics.

Rats are more than a nuisance. They are a serious menace to health, for they are subject to some of the diseases to which man is heir. Bubonic Plague or the black death of the Middle Ages is an infection primarily of rats and secondarily of man. Rats are great travellers. They infest all vessels and in this way have carried bubonic plague to the four quarters of the globe. Most epidemic diseases are transmitted by more or less direct contact between man and man, but we would never have plague were it not for the rat.

Plague, or the black death, is one of the most serious epidemic diseases in the history of sanitation. During the Middle Ages, about one-fourth of all the people who lived in Europe died of this di-ease.

"A journal of the plague year" by Daniel Defoe is a more graphic story than his "Robinson Crusoe." Plague is just as virulent to-day and claims even more victims than it did in the days when it was not understood. During the twentyfive years fron 1893 to 1920, 10,784, 391 deaths occurred in India alone from plague.

Plague occurs in two chief forms, known as bubonic plague and the other as tha pneumonic form of the disease. Bubonic plague is contracted from the rat through the bite of a flea. The flea is the intermediate host that conveys the plague bacillus from the rat to man;

Bubonic plague does not spread from man to man ; in other words, it is contagious. On the other hand pneumonic is directly transmissible but fortunately is a relatively uncommon form of the disease.

RESERVOIRS OF TRICHINIA

In addition to plague, rats are susceptible to and responsible for other diseases. Thus rats are one of the great reservoirs of trichinia and are responsible for trichinosis which is caused in man by eating infected pork.

Plague which affects the lungs chiefly resembles pneumonia.

Rats are responsible for infectious jaundice, also known as epidemic catarrhal jaundice. This disease is endemic among rats all over the world. It is due to a spirochæte and varies in virulence in different times. In Japan, infectious jaundice is more prevalent and more serious than in America or Europe.

Rats also suffer with leprosy, which is a close counterpart of leprosy in man. This disease is transmitted from rat to rat, but the relation between rat leprosy and the disease in man is not clear. However a study of leprosy among rats will very likely throw light on the mode of transmission and control of the human disease.

Rats harbour a number of other parasites, such as tape-worms, amebas, indistinguishable from the amebas of dysentery, and other bugbears that cause trouble in the human race. Rats also are apt to carry a bacillus that causes food-poisoning, and furthermore they have been accused of dragging typhoid bacilli from sewers and cesspools to the food in our shops and kitchens.

Rat-bite fever is a rare and curious infection sometimes following a rat bite. The symptoms come on after the wound has healed. Only eighty cases have been reported in the scientific literature up to 1918. About 10 per cent. of the patients died.

Few persons have any conception of the number of rats in cities and towns. In fact, the number of rats is limited only by the opportunities for nesting and food supply.

The brown rat reproduces from three to five times a year, each time bringing forth a litter of six to nine and sometimes as many as twenty-two and twenty-three young. With the ordinary rate of increase one pair of rats would multiply in three years to over 3,000,000,000, provided all survived. The average life of a wild rat is about two years. Few rats are seen during the day-times for they are noctural and secretive in their habits.

FAMINES DUE TO RATS

Rats are a menace not only because of the diseases they convey, but also because they eat and destory best quantities of the world's food

supply Famines in Russia and India have been due in part to the rats eating much of the grain.

In buildings the brown rat keeps mainly to the cellar and the lower parts, where it commonly lives in burrows From these retreats it makes nighty excursions in search of food. The roof rat and the black rat live in the walls or in the space between ceilings and roofs Rats readily climb trees to obtain fruit. In the tropics, the roof rat and the black rat habitually nest in the trees,

In the open, rats seem to have defective vision; by daylight they move slowly and uncertainly, but at the side of the room and in contact with the wall, they run with great celerity. This fact suggests that the Vibrissae (Whiskers) serve as feelers and that the sense of touch in them is extremly delicate. The animal always prefers narrow places as high ways, a circumstance that may be made use of in placing traps.

The destruction of food, merchandise and property by rats is so great that this alone would justify active measures of suppression, even though they were not responsible for plague, trichinosis and other infections. Rats destroy grain while it is growing. They invade stores and they destroy flowers, laces, silks and carpets. In the markets they eat fruits, vegetables, meat and all sorts of foodstuffs. They destroy by pollution ten times as much as they eat, cause conflagration by dragging matches into their holes, gnaw lead pipes and floors of houses, ruin artificial ponds and embankments by burrowing, destory eggs and young poultry, damage foundation, floor, door, and piers; in short they are the worst mammalian pest.

MEANS TO DESTROY THEM

World wide extinction of the rat is a hopeless task. They are intelligent and cautious. Extermination is a biologic impossibility, killing off large numbers gives survivors an easier living. Our hope, therefore, is in repression, so as to minimize the danger to health and lessen the destruction to property. The warfare against rats requires rat proof building, keeping food from rats, encouraging their natural enemies and using traps and fumigation.

The natural enemies of the rat are the larger hawks, owls, snakes, skunks, coyotes, weasels, minks, dogs, cats and ferrets. Of dogs, fox terriers make the best ratters.

Food must be kept away from rats. Well-fed rats mature quickly, breed often and have large litters. A scarcity of food helps all other suppressive measures. Garbage and offal must be disposed of so that rats cannot get at them. The health department should require well covered garbage cans and see to it that the garbage is frequently removed and burned. To deposit it on the ground only invites and nourishes rats and other

vermit. Slaughter houses are centres of rat propagation. The offal is best disposed of by burning.

Expert trappers prefer to vary the kind of traps they use from time to time and also to change the bait from cheese to bacon, grain, meat, vegetables, bread or fish. The best poison is barium carbonate. Strychnine and arsenic are dangerous on account of the accidental poisoning of children, and phosphorus is hazardous on account of fire. The placing of poisons in and about dwellings is objectionable on account of the odour of the dead rats.

USE OF POISON

Poisons may be of service in granaries, stables, wharves, storage depots, garbage dumps and places where rat-proofing is difficult or very expensive. Experience is required in laying out poisons safely and effectively. The old rats are wary and will refuse bait unless it is artfully concealed and judiciously placed. Bacterial vaccines are expensive, uncertain and impractical.

Experienced ratters depend on traps, dogs, cats and ferrets. The best protection is rat-proofing of buildings in order to keep them out, but even this requires constant vigilence, inspection and attack on the first sing of a rat. Large buildings should be screened so that rats cannot wander from one portion to another.

Fumigation with sulphur or cyanide gas is useful to destroy rats on boardships and in other limited places. These are dangerous and must be used with caution to prevent casualities to man.

The repression of rats requires individual and community co-operation under the skilled guidance of the health officer. Wharves, granaries, butcher shops, abatoirs, homes and all places in which food is handled, must be rat-proof. Rats will not remain where food is inaccessible nor can they thrive and multiply.

Cleanliness is the fundamental principle in this problem as it is also the keystone that supports the arch of sanitation and hygiene.

HAZARDS TO CHILDREN

—:o:—

Common Accidents and their Remedies

I

The most appalling and tragic fact about accidents is that a large proportion of the victims are children. The deaths of children due to accidents in the home are almost as numerous as the deaths of children from all other causes. The most frequent causes of fatal accidents to children are falls, burns, scalds, asphyxiation by gas, and playing with unsafe toys and sharp-edged tools are common causes of serious injuries.

Practically all accidents to children are the fault of the parents or other adults. Carelessness, neglect, disorderly habits, and thoughtlessness on the part of adults cause accidents to the child. Curiosity in the child leads him into dangerous paths. It is the duty of every adult to set an example to children and show them how to do things safely. The child must be taught to avoid dangers in the home as well as on the street. He will be best taught by the example which adults set for him.

BURNS AND SCALDS

Burns and scalds cause more deaths of children than any other class of accidents. Kettles with hot substances in them should never be placed too near the edge of the stove, sink, or table. Tubs or boilers of hot water should not be placed on the floor where small children may fall into them. Never carry a kettle of hot water in one hand and a child in the other. The two may meet if you should stumble.

Matches should be kept out of reach of children.

Only the relatively harmless varieties of fireworks should be permitted in the hands of children. Accidents and noise on the Fourth of July (in our case Dewali festivals) are giving way to community celebrations. Leave the dangerous fireworks and pyrotechnic displays to skilled adults.

Firearms, if they must be kept in the house, should be kept locked out of the reach of children. A young boy never should be allowed to use a gun unless an older person is with him. Children should be instructed that every gun is loaded until proved otherwise.

FALLS

A certain mother living in a second storey flat failed to realize the danger of stairs, didn't provide a barrier to prevent the baby from falling. The baby fell down the steps three times within as many months, and still no attempt was made to make the hall safe.

Some falls are the result of poor eyesight. Others are caused by imperfect co-ordination of muscles, which is characteristic of small children.

Objects left lying on the stairs or on the floor are dangerous to adults and children alike. Habits of orderliness should be taught by parents and practised by both adults and children for their common safety.

Porch railings should be built high enough and in such a manner that small children will not readily climb over them and fall.

Window screens should be fastened securely. Many a child has fallen from open windows or windows with insecurely fastened screens.

Rickety furniture makes poor apparatus for play. Deaths have resulted from falls from chair and other low pieces. Falling objects such as book cases, marble tops of table, heavy picture frames, etc. also cause many serious accidents in the home.

SWALLOWING OF SMALL OBJECTS

Analysis of the cause in 1,135 cases of objects lodged in the throat, lungs and food passages shows that in nearly 90 per cent. the presence of the odject is due to easily avoidable carelessness.

Carelessness in the prepartion of foods.

Carelessness in eating and drinking.

Carelessness in putting inedible objects in the mouth.

Carelessness of parents and nurses.

Foods for children, invalids, and aged persons should not contain such things as bones, fruit seeds, pits or stems.

Small bones, such as are found in fish and birds, should be removed from children's food.

It is careless to serve food containing fragments of nut-shells, egg-shells, shells, crab shells, and so forth, and to permit containers and utensils to contribute to the food such fragments as chips of enamel or china-ware, splinters of wood from flour or sugar barrels, and solder from tin cans. When a fruit or jelly glass breaks or chips in opening, the contents should be strained or thrown away.

Care should be taken when cooking or serving food to see that there are no loose pins or buttons in the waist that could fall into the food.

Hasty eating and insufficient mastication should be guarded against as dangerous.

The chewing of pencils, toothpicks, grass stalks, straw and the like, apart from the general objections, is a cause of foreign body accidents.

Children should be taught not to put inedible substances smaller than a spoon in their mouths.

Coins are filthy things to put in the mouth, and may get lodged in the throat. Teething rings are objectionable, but a coin as a "tooth-cutter" is worse.

Babies should not be put on the floor to amuse themselves until after the floor is cleared of all small odjects, such as tacks, seeds and bits of coal.

It is careless to allow a child to run or jump with anything, even food, in its mouth. Children's tops should be inspected for small loose parts, such as eyes, buttons, fragments of metal and wood.

Babies should not be allowed to play with corn (maize), coffee berries, seeds, small marbles, jacks and the like.

Children under two years of age should never be given peanuts or any kind of nut candy. They cannot chew the nuts, and are liable to choke on them and aspirate them into the lungs.

Don't set a bad example to a baby by holding a straight pin or safety pin in your mouth.

Don't bend over a baby or take it into your arms without making sure that there are no pins, needles, safety pins, buttons or jewellery in your waist that could get into the baby's mouth or reach.

If you see a foreign body on the tongue, take it out; but if it has gone down back of the tongue don't try to reach it with your finger. Send the patient to a Physician.

THE CHILDREN'S TEETH

How to Protect them from Decay

Early dental decay in children may be a sign of some constitutional disorder, such as rickets, or some other condition in which the absorption of calcium from the food is deficient, but often the seeds of dental caries are sown in early life by lack of attention to the teeth. writes Dr. E. M. Anderson in the "New Health."

It is essential to cleanse the teeth thoroughly before the child goes to bed, as otherwise fragments of food which may be lodged between the teeth will undergo fermentation and undermine the dental enamel. Certain foodstuffs, particularly those containing starch or sugars, are especially prone to ferment. They should, therefore, be avoided at the child's last meal, if this is given shortly before bedtime. Biscuits, cakes, and, above all, sweets are all harmful in this respect. The best supper for a young child is soup or broth, neither of which will leave a residue which may undermine the enamel of the teeth during the night. Sweets, particularly when made from artificial sugars, and of the cheap variety, are bad for the teeth unless extreme care is taken in regularly cleansing them.

Soft foods are not good for the teeth in excess, as they require but little chewing. Crusts, rusks, and other hard or crisp foods are necessary in add tion.

Sound teeth are so vital to the health of the child that no pains should be spared in assisting their normal, healthy development during the early and most important years. Caries even of milk teeth, adversely affects the health, due to poisonous absorption from them into the digestive tract, and failure to masticate the food properly.

SALTS

We have learned to place more reliance upon earthly salts in food as an important factor in our nutrition. They consist principally of potassium, calcium, magnesium, and iron and are to be found in fruits

and vegetables. Diets deficient in these elements will promote disease. Denatured foods, i.e., white flour, peeled potatoes, white rice, etc., are the deficient foods that should be carefully avoided in the daily diet, and particularly in the diet of children On the other hand, there should enter into the daily diet some form of raw fruit and salad at least once daily. If this is done the natural salt-content of our food will take care of itself.

Reviews and Notices of Books

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Diabetes Mellitus and its Dietetic Treatment, By B. D. Basu, Major, I.M.S (Retired). Edited by Lalit Mohan Basu M.B, (Cal.). Fifteenth Edition ; Published by Dr. L. M. Basu, M.B., Bhuvaneshwari Ashram, 35 Bahadurganj, Allahabad 1930. Price Rs. 2.

First Edition published in 1909 This manual has been reprinted fifteen times during twenty years. The book has undergone thorough revision for the fifteenth Edition in 1930, with the collaboration of the author's son Lalit Mohan Basu M. B. This hand book is written with the intention of providing a practical guide to the prevention and dietetic treatment of Diabetes mellitus.

Dr. Bose has described a pre-glycosuric stage in which the presence of sugar may not be detected. Errors in diet are described in detail. The importance of the practice recommended in the Yoga system to purify the intestinal canal thoroughly is briefly mentioned. The Insulin therapy is described in plain and easy language. The subject matter presented is complete, every possible view point being considered. The book will appeal to the practitioners as well as to the students.

Text Book of Pathology including Bacteriology, Animal parasitology, Laboratory methods and Laboratory Diagnosis of Diseases—By Dhirendra Nath Banerjee M.B. (Cal.), M.D. (Berlin), Demonstrator of Pathology, Carmichael Medical College, Radiologist, Chittoranjan Hospital, Radiologist, Calcutta Polyclinic Ltd. ; Author of "Cholera and its modern treatment." Second edition ; Revised and Enlarged ; With 305 illustrations and 9 coloured Plates. Published by The Medical Bureau, 190 Cornwallis Street, Calcutta, 1929 Price Rs 12 only.

This is the second edition of the author's Text Book of Pathology which was published in 1925. The book has undergone a thorough revision. Many new illustrations have been added (80 in number), mostly from Indian source. There has been considerable improvement in type, paper and blocks The present edition is undoubtedly a valuable work, and it is admirably printed, profusely illustrated and well-bound.

A noticeable feature of the illustrations is that some of these are prepared according to histo-topographic method of Christeller.

It is gratifying to find that this book has gone two editions in 4 years. We hope that it may see many more editions, and that it will make a special appeal to both the medical practitioners and the students.

The book commences with an apt quotation from Madhava Kara, the celebrated author of the *Nidana*, an analysis of contents of which is given in full, evidently from our short memoir on the author in our Journal.

A short history of the science is given in which the evolution of Pathology—the Indian School and the Western School—is described. A reference to the Postmortem examination in the Arthasastra of Kautilya is very interesting. Of the Western School, the names of Aristotle, Harvey, Malphigi, Leenwenhock, Morgagni, Virchow, Pasteur, Koch, Ehrlich, Wasserman, Metchnikoff, Noguchi and Shiga are mentioned with short notices of their work. The subject matter of the book is treated ably from every point of view and great praise is due to the author for its production.

News & Notes

—:O:—

CO-ORDINATION OF MEDICAL RESEARCH

Enquiry Report

Imperial Institute for India

The report of the Committee on the organisation of medical research under the Government of India is published for general information :— The Government of India appointed a committee to consider and advise upon the proposal made by late Prof. E H. Starling, C. M. G., F. R. S., Mr. Jodrell, Professor of Physiology at the University of London for the establishment of a Central Medical Research Institute for India including the location of such an Institute, its structure and functions, its relationship with other organisations devoted to medical research and constitution and recruitment to agency employed by the Central Government for the conduct of such research. The committee consisted of Sir Walter Fletcher, Secretary, Medical Research Council (Privy Council) as chairman, Lt; Col. S. P. James, Medical Officer and Advisor on tropical diseases, Ministry of Health, London, Dr. R. Row, Professor of Pathology, Grant Medical College, Bombay as members and Lt., Col.

S R. Christopher, Director, Central Research Institute, Kasauli as member and Secretary.

The following is the summary of the chief recommendations of the committee :—(1) An Imperial Medical Research Institute which will be headquarter of the Central Medical Research organisations working throughout India should be founded at Dehra Dun. (2) The Institute should have its own Governing Body and its own Director-in-Chief. (3) The functions of the Institute should be in general to serve as—(a) centre to collect and bring into proper relations with one another the result of medical research work throughout India, (b) the headquarters of Central Medical Research organisation working anywhere in India and concerned chiefly with all India problems, (c) the centre for basic research work and the source of assistance to all in matters in which highly expert opinion is desired, (d) a bureau of information and publications, place for keeping standard collections and type cultures and and speciments, Central Medical Library and Central Supply Depot of equipment for workers in the field, and (e) training centre for medical research workers and assistants.

If the scheme for a reconstructed central medical research institute be accepted by the Government of India, the existing Central Institute at Kasauli should be abandoned. If the proposal as a whole is unacceptable in principle or along their major lines, proposals for the new institute at Dehra Dun should be rejected at once and action should be taken to proceed immediately with part of the scheme that are acceptable, using the existing Kasauli Institute as the base. With a view to giving more opportunity for research work the provincial Governments should be moved to take steps to increase the number of the superior staff employed as directors and assistant directors and to require for these appointments a high standard of qualifications for research work. With the approval of provincial governments six officers from the medical research cadre should be made available to increase the sanctioned staff of the provincial institutes.

COMPOSITION OF THE DEPARTMENT

The strength of the Medical Research Department should be increased from 30 to 52. The followin appointments be named as specified appointments :—

(a) Under the Government of India with headquarters at the Central Institute. A director-in-Chief of the institute, one director of sections, seven assistant directors of sections.

(b) In provincial institutes,—

Directors five and assistant directors twelve. Twenty additional appointments in the departments should be open equally to the I.M.S. and non-I.M.S. candidates. The composition of the cadre should be

changed by closing recruitment to the present lower salaried group of non-I.M.S. members and by revising the rules, conditions and pay of the non-I.M.S appointments with a view to raising the standard required of the members of that group. The scale of pay for non-I.M.S. members should be at least equivalent to and may have to be higher than the present scale of pay of I.M.S. member.

RESEARCH FUND ASSOCIATION

As regards the Indian Research Fund Association, the committee recommends the addition of four consultative members resident in Great Britain to the governing body of the Association. The Association should recruit its own workers to a greater extent than hitherto with the object particularly of making the Association the chief source of recruitment of non-I.M.S men to the Government Medical Research Department.

METHOD OF RECRUITMENT

As regards the method of recruitment the committee recommends that recruitment to the Medical Research Department be from the ranks of the I.M.S and from open market, that the present practice of reserving some appointment for officers of the I. M. S. be continued, but the proportion of non-I.M S. to I M.S. officers should be increased by making recruitment for twenty additional appointments to the cadre open to all.

The committee further recommends that the Indian Research Fund Association should take steps to arrange for the training of young graduates in medicine or other sciences.—"*Free Press.*"

MEDICAL REGISTRATION

The following gentlemen have been elected members of the Bengal Council of Medical Registration :—

Dr. Kedar Nath Das, C.I.E., Lt.-Col. A. D. Stewart, I.M.S., Lt.-Col. H. W. Acton, I.M.S, Dr. Narendra Nath Basu, Major S. N. Mukherjee, I.M.S, Dr. J. C. Chatterjee, Dr. Kumud Sankar Roy, Dr. Rai J. N. Mitra Bahadur, Dr. Satish Chaudra Ghosh, Capt. S. J. V. Fox, I.M.D., Dr. Bipinbihari Sen, Dr. Jatindranath Maitra, Dr. Pramathanath Nandi, Dr. Sir Nilratan Sarkar, Dr. Susil Kumar Mukherjee, and Captain Satish Chandra Sen Gupta.

The following gentlemen have been nominated by Government :—

Dr. Gordon N. Brandon, Dr. Aubrey Pollock, Chief Medical Officer E. I. Railway, and Lt.-Col. R. B. Lloyd, I.M.S.

Major-General G. Tate, I.M.S., Surgeon-General with the Government of Bengal, is nominated to be President of the Council.

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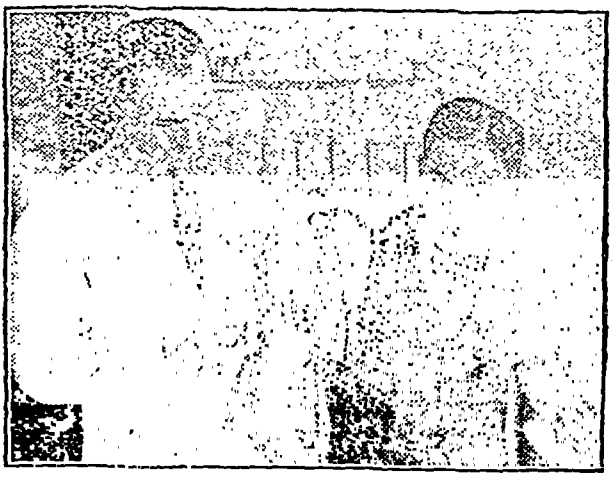

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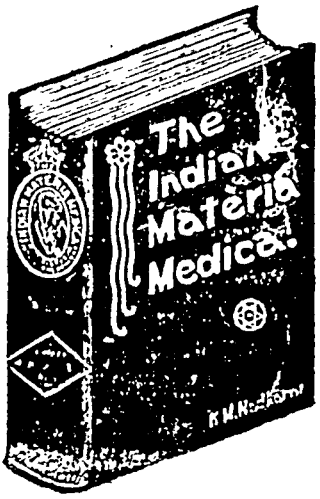

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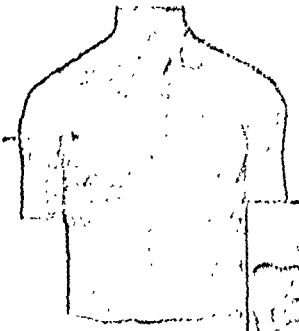

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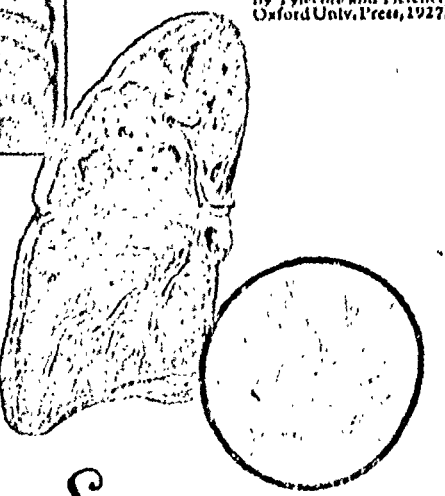

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PREFACE.

In presenting this catalogue to the public, I think it is necessary to explain briefly the circumstances connected with its compilation. Medical bibliography is of comparatively recent development and is generally regarded by students of medicine to be of no practical utility. It was not without hesitation that I assented to the publication of the present volume. In fact, when these notes were collected, I had no intention of their publication. These notes helped me in writing the volumes of *History of Indian Medicine*, three volumes of which have already appeared in print. The first volume comprised the period designated the Vedic Ages ; the second volume comprised the period of the Sages and Munis ; and the third volume brins us down to the end of the historical period generally described as 'Before Christ' or 'B. C.'

The present publication was undertaken with the hope of supplying a want I have myself experienced. It was done partly from a wish to present in a compendious form a list of Sanskrit books on the Ayurvedic system of medicine. The catalogue when printed will contain a mass of information available to the public.

The title "*Index to the Bibliography of the Ayurvedic Books*" describes the scope of the publication better than any other. It is not an independent catalogue by itself. It is based on many catalogues which describe the MSS. and printed books on medicine along with other MSS. of the different and cognate branches of learning. This catalogue gives us exact references to the titles of the books, their MSS., the dates of their composition, names of their authors and commentators, their editions and translations with the names of the editors and translators.

I have added such information as was available to me regarding the circumstances under which they were respectively composed.

I also had in mind the hope that it might form a stepping-stone to a more general acquaintance with the books in the list. The list is far from being an exhaustive one. In fact it is practically impossible to secure absolute completeness in such a list, as new catalogues of MSS. are being published in India, Europe and America. A vast amount of work still remains to be done, and it is pleasing to observe that investigations are now being made to complete the missing links in the chain of the knowledge. The importance of sucn investigation cannot be overrated as it was in India that the Science of Medicine had its origin and whence it spread to Europe.

I have derived my information from different sources, for which more precise acknowledgement than what appears in the body of the book has been omitted with the view of economising space in a record already inconveniently large. The record comprises a long period of time from pre-historic age to the present time,—a period of about 3,000 years. We may express the hope that the records that are now being made will prove to be of inestimable value to those who follow us.

"It has long been desirable that students of Sanskrit literature", says Montogomery Schuyler, in the *Preface* to his work "*A Bibliography of the Sanskrit Drama*", "should have as complete a catalogue as possible of all the Hindu authors and their writings in order that they might be able to tell at a glance how many manuscripts of each work are known, how many editions and translations have been made and what has been written concerning them". It is the purpose of this volume to fill this need for the Sanskrit medical books.

I had not access to all the actual Mss. and editions, and so a large number of entries in this *Bibliography* must be taken as derived from second-hand sources. Elaborate

We are glad to announce that already we have received help from gentlemen who are interested in the spread of Ayurvedic studies. Below we reproduce a letter from one of the foremost Ayurvedic Physicians and Publishers of Ayurvedic books.

LAXMI NIVAS,
366, Kalbadevi Road,
Bombay, 7-2-30.

DEAR SIR,

Many thanks for your kind letter. I am sending to-day, my following publications as asked for by you which I hope you will kindly acknowledge :—

1. Rasa-Kamdhenu.
2. Rasaprakash Sudhakar and Rasasanket-Kalika.
3. Khem Kutuhal.
4. Ayurveda Prakash.
5. Rasapaddhati and Lohasarvaswa,
6. Gada Nigraha, Pt. I.
7. Gada Nigraha, Pt. II.
8. Rajmartanda, Nadi-Pariksha, Vaidyamanorama and Dharakalpa.
9. Anangaranga.
10. Kandarpachudamani.
11. Pancha Sayak.
12. Trishati.
13. Madhav-Nidana with Madhukosh commentary.
14. Dravya-Guna Sangraha.
15. Charaka Sanhita—Text.
16. Bharatiya Rasa Shastra.
17. Aushadhi Sangraha.

Sushruta Sanhita with Dalhan Commentary and Sushruta Sanhita with Chakrapani Dutt Commentary are being edited by me at present. I will send you these two when published.

Wishing you success in the great task undertaken by you. With best thanks.

Yours sincerely,
Sd. VAIDYA JADAVJI TRIKAMJI ACHARYA.

P. S. The books have been sent by Railway Parcel to-day and the receipt is enclosed herewith.

Original Articles

THE NERVOUS SYSTEM OF THE ANCIENT HINDUS

BY

ASHUTOSH ROY, L.M.S., (Hazaribagh)

(Continued from our last issue)

—:o:—

(c) *Nerves of General Sensation or the Monobaha Nadis.*

These are afferent sensory fibres which communicate the sensorium (sensory area of the brain) with the periphery (Skin and organs)—spinal afferent fibres.

They are also afferent intra-cerebral "association fibres" passing from one lobe of brain to another.

According to Dr. B. N. Seal these "Monobaha Nadis" are vehicles of consciousness or channels of communication of "Jiva" (Ego or soul to the "Manas Chakra" (Sensorium). "It is not sufficient," says Prof. Seal, "for sensation to rise to the level of discriminative consciousness unless it is communicated by Manas-chakra (sensorium) to the Jiva" (Ego).

Thus, says modern physiology, the non-sensory afferent fibres end in the cerebellum and no sensation is produced unless the afferent fibres pass by successive relays to the sensorium (Brain, sensory area) and there communicated to the "Jiva" (Ego), there is no sensation (discriminative consciousness of sensation).

Modern anatomy of the intra-cerebral association fibres
These are situated in the so called "Silent area" of the brain, whose function is unknown in modern West, hence the name "Silent area".

There are three groups of association centres in the brain, as follows :—(Vide figure I).

(*a*) The first group of association fibres are located in the anterior part. On referring to the map of the brain, it will be found that there are several blanks (silent areas),

one of which is situated at the anterior or frontal lobe, which is very large in human being. It is supposed that the silent area in this lobe is the seat of higher intellectual function (anterior association centre).

(*b*) The second area of association centre (posterior association centre) is situated in the parieto-temporal lobe. According to Moth, while the anterior association centre (in frontal lobe) is important for intellectual operation, the posterior association centre is larger and more convoluted, showing greater intellectual development.

(*c*) There is a third or middle association centre in the "Island of Reil" whose function is unknown.

Details of actions of these centres and their association fibres are unknown, as they should be in modern medicine, for some of these areas, if not all, are associated with higherintellectual and metaphysical functions, fully developed in that form of "Yogic" exercise, known as "Raj-Yoga."

(*d*) *Nerves of Motion and Organic action*

or

The Agna-baha Nadis.

These are efferent motor fibres which pass from the "Sahasrar" (motor area) of the brain along the spinal cord to the skeletal muscles.

They are also efferent sympathetic fibres which pass from the "Sahasra" along the sympathetic to the various organs.

They are also inter cerebral association efferent fibres passing from one lobe of brain to another.

These six groups of Nerves (of special and general sensation as well as motor and organic Nerves) are stated by the ancient Hindus as associated with the "Shata Chakra" or subtle centres connected with the "Sushumna" (spinal cord), as follows :—

The "Nerves of Smell" are associated with the Prithvi in the "Muladhar" (subtle centre in the spinal cord associated with the coccygeal nerves and those of the lower extremities).

The "Nerves of taste" are associated with the "Jala-chakra" in the "Svadhisthan" (subtle centre in the spinal cord associated with the sacral plexus of spinal nerves).

The "Nerves of Sight" are associated with the "Teja-chakra" in the "Manipur" (subtle centre in the spinal cord associated with the Lumber plexus of spinal Nerves.)

The "Nerves of Touch" are associated with the Air Chakra in the Anahata (subtle centre in the spinal cord associated with the Brachial plexuses of spinal Nerves.)

"The Nerves of Sound" are associated with the "Ether Chakra" in the "Vishuddha" (subtle centre in the spinal cord associated with the cervical plexus of spinal Nerve.)

"The Nerves of mind" (Monobaha) and the "Nerves of motion and organic action" (Agnabaha) are associated with the Agnabaha centre (Agna-Chakra or gangliated plexus of command), situated inside the skull between the two eye-brows. This is associated with the "association fibres", both afferent and efferent, between the various lobes of the Brain.

The inherent idea is that Brain is as much an organ as the Heart or the lungs, stomach and the intestine and so forth, differing only in their locations.

The fact will be evident if we study the development of the cerebro-spinal and the sympathetic systems.

The old idea was that "the sympathetic Nerves and ganglias are merely outgrowth of the cerebro-spinal system.

The next idea is that "the vegetative apparatus is the oldest part of the Nerves system. In the first place there is the fascinating story of the developments of the vertebrates from the invertebrates of the sea. The blood salts and sea salts are identical".

Then there is the whole group of data which demonstrate that the "primitive wishes" which make up the content of body consciousness" are determined by states of tension or relaxation of different segments of the vegetative apparatus".

During the course of evolution, the Brain and its appendages are gradually evolved, consequently the Brain is the servant of the vegetative apparatus".

(*Bermann glands regulating personality*")

While "Ayurved" which deals with bodily organs gives greater importante to the vegetative apparatus, "Yogic", which deals with mental functions and whose object is "Laya" or dissolution beginning with suspension of animation, gives greater importance to the crebro-spinal system.

The various "*ashans* and *mudras*" for "Hata-Yoga" depend on particular states of tension and relaxation of the different segments of the vegetative apparatus, influencing the various chakras" (Subtle centres) in the cerebro-spinal axis.

These six chakras which are also associated with the sympathetic, command the voluntary, skeletal as well as involuntary organic action. The "Agna-chakra" commands not only the structures and organs of the different parts of the trunk and extremities but of the brain.

It is difficult to understand what connection there exists between the organs of sensation and the different parts of the body (containing structures and organs).

The *Yoga-tattva Upanishad* decribes the various parts of the body as follows :—

Kshiti or Earth—Lower pelvis and Lower extremity, site of Muladhar chakra.

Ap. or water – Pelvis proper, site of Svadhisthan chakra.

Teja or fire —Abdomen, site of Manipur chakra.

Vayu or Air —Chest and upper extremity, site of Anahata chakra.

Byom or Ether—Throat and head, sites of Vishuddha and Agna chakras.

The five "Bhutas" or elements of which the body is composed have the following qualities or physical properties :—

Earth	is associated with the sense	of smell
Water	,,	of taste
Fire	,,	of sight
Air	,,	of touch
Ether	,,	of hearing and of mind.

Hence those chakras are connected with those special sensory Nerves. Thus we see that the Hindu explanation is metaphysical. The connection therefore between those nerves and the chakras are metaphysical and not physiological.

It is believed that the *yogi* who has controlled these chakras by exciting the Kundalini attains supperhuman powers, *e.g.* :—

Controlling muladhar—commands the sense of smell so that by rubbing his hands he can make any one perceive any particular smell.

Controlling svadhisthan—commands the sense of taste. The yogi can walk over water and so forth.

The Spinal Nerves

These are 4 groups of Nerves as follows :—

(*a*) Varuna—These distribute fibres to the chest and upper extremities and correspond to the branches of the Brachial and dorsal plexus of spinal nerves, which receive branches from the thoracle portion of the gangliated cord of the sympathetic (vagus)

(*b*) Visvodhara—These distribute fibres to the abdomen and correspond to the branches of the lumbar plexus of spinal nerves, which receive branches from the lumbar portion of the gangliated cord of the sympathetic as well as from the para-sympathetic (vagus).

(*c*) Kuhu and Alambusa—These distribute fibres of Nerves to the pelvis and the lower extremities and correspond to the branches of the sacrococcygeal plexuses of spinal nerves, receiving branches from the pelvic portion of the gangliated cord of the sympathetic as well as the para-sympathetic (Nervous regions).

The sacral plexuses of spinal Nerves divide into two terminal branches as follows :—

(*a*) Pudie—to organs and structures of pelvis.

( ) Great Sciatic—to lower extremities.

The Ida, Pingala and the Sushamna.

These are the most important of the fourteen groups of Nerves mentioned in "Yoga Books" and of these three, the "Sushamna" is the most important from "Yogic" point of view, because when by "Yogic" exercise the "Kundalini" is excited, it passes, by successive stages, through the different segments of the "Sushamna" into the Brain.

The Sushamna or the Spinal Cord.

The "Sushamna" or the spinal cord is centrally situated inside the "meru-danda" (Spinal column). It extends from the "Sahasra-dal-Kamal" (*lit.* the lotus with thousand petals which corresponds to the brain with its innumerable convolutions) to the "Muladhar Chakra" (Pelvic Plexus of the Sympathetic).

The "Sushamna" of the ancient Hindus therefore consists of the following parts of modern Anatomy :—

(*a*) The middle portion inside the spinal column extending from the Atlas or first cervical vertebrae to the lower

border of the Last Lumbar vertebrae which correspond to the spinal cord proper of modern Anatomy.

(*b*) The lower part of the "Sushamna" is the Filum Terminale, which descends through the centre of mass of nerves forming the Cauda-Equina (containing the roots of sacral and coccygeal spinal nerves) on a level with the second or third sacral vertebrae.

(*c*) The upper part of "Sushamna" after piercing the "Talu" (palate or the base of the skull) goes inside the Cranium and extends up to the Basal ganglia forming the lower brain corresponding to medulla and pons.

Detailed anatomy of the Sushamna.

The sushamna is composed of :—

(*a*) White matter situated externally, also known as "Sushamna.

(*b*) Grey matter situated internally which occupies mainly the centre of the cord, round about the central canal known as 'Bajra' or 'Bajrakhya' fibres.

(*c*) The "Brahma-randhra" or "Brahma-Bibar" which is the central canal of the cord.
Literally it is the canal of "Brahma" through which "Kundalini" passes up in Yoga when excited.

(*d*) The fine Nerve fibre, as fine as the thread of a spider's web occupying the centre of the canal of the spinal cord (Brahma-Bibar) is known as the "Chitra Nadi" or "Chitrini" fibre and corresponds to the fibre of Reissner.

Course of the Fibres.

The "Bajra" fibres or grey matter of the "Sushamna" extend below down to the "Muladhar Chakra" (Pelvic Plexus, opposite the third or fourth sacral vertebra). That is the grey fibres of the spinal cord after their termination in the lower border of the First Lumbar Vertebrae continue as the grey fibres of the filum terminal, which extend up to the second or third sacral vertebrae. Here it ends according to modern Anatomy. But according to the ancient Hindus, the "Bajra" fibres go further down to near about the tail end of the coccyx, where they meet the fibres from the "Ida" and the "Pingala" forming the Traipur Chakra" (Ganglia Impar or coccygeal Ganglia). Modern anatomy says that the fibres from the two sympathetic chains (Ida and Pingala) and not of the spinal cord meet at the Ganglia Impar.

The "Bajra" fibres extend upward into the Medulla (forming the floor of the fourth ventricle) and the Pons (Posterior or Dorsal aspect.)

The "Brahma-randhra" or the central canal of the spinal cord is continued upwards into the Medulla (as the fourth ventricle) and then passes upwards (as the third ventricle) and extends right up to the "Brahma-dwara" (literally door of "Brahma", corresponding to the foramen of Monroe).

The "Chitra or Brahma Nadi" is the fibre of Reissner which takes its origin from the wall of the cerebral ventricles, runs down the central canal of the cord as a fine thread, whose function is unknown, says modern medicine. According to the ancient Hindus, "Kundalini", when excited, passes up from the "Traipur Chakra" (Gangli Impar) to the "Sahasrar" (Brain) along the "Chitra or Brahma Nadi."

The Ida and the Pingala.

These are the two chains of Nerves situated outside the "Merudanda" (spinal column), one on each side, the "Ida" being the left and the "Pingala" the right chain corresponding to the two sympathetic chains.

They also include the efferent or centri-fugal (Ida) and the afferent or centripetal (Pingala) fibres situated in the Sushamna, within the spinal column.

The fibres from "Ida" and "Pingala" join above in the cranium where they meet the "Bajra" fibre of the "Sushamna" (denied in modern anatomy) forming the "Agna Chakra" (Ganglia of Ribes) at a spot opposite the junction of the two Eye brows. Below they join with each other as well as the "Bajra" fibre of the "Sushamna" as already stated at the "Traipur Chakra" or Ganglia Impar.

The fibres of the "Ida and the Pingala "communicate freely with each other as well as those of the "Sushamna" all along its course, particularly at the region of each of the "Sata Chakras" (Six Gangliated plexuses of the sympathetic) where the fibres decussate with each other forming "granthis" or knots.

(*To be continued*).

PULSE IN PROGNOSIS OF DISEASES ACCORDING TO AYURVEDIC MEDICINE

BY

DR. EKENDRANATH GHOSH, M.Sc., M.D., ETC.

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In two works on Sphygmology [II. 42 ; ना वि. त] we find the record of pulse characteristics in several common diseases which indicate a very unfavourable prognosis. The pulse conditions are often supplemented by other bodily signs and symptoms. Although they seem to be more or less superfluous in the present day medicine, they were undoubtedly of great value for the guidance of the practitioners.

(1) Agnimandya (Anorexia).

वह्निकालं यदा वह्निर्मान्द्यं स्यात् क्रमशस्तदा ।
जीवत्यासाध्यो बालस्तु न जीवति जरायुजः ॥

If there be loss of appetite for a long time the life gradually becomes hazardous. Even if a boy, the person does not live.

The condition is evidently symptomatic of a progress of incurable disease, as tuberculosis, gastric cancer, etc.

(2) Ajirna (Dyspepsia).

अजीर्णे रोगे क्षीणा चेत् कुटिलान्तःस्थिरा यदि ।
नानोपद्रव संयुक्त दुर्बलस्य मृतिर्भवेत् ॥

If the pulse in Dyspepsia becomes small (thready), curved and nearly imperceptible and if it is attended with other complications, it indicates death in a weak (asthenic) patient.

Here the condition is evidently secondary to some obscure fatal organic disease.

(3) Atisara (Diarrhœa) and Grahani (Chronic Diarrhœa).

यो जीर्यत्यतिसारी च नानोपद्रवसंयुतः ।
एवं ग्रहण्यां नयनमशुभं मरणाय च ॥
नाडी मन्दगतिः स्थिरा भालेऽल्प स्वेदतानलः ।
चिरजीवी न जीवेत् साश्वेदस्याशनं क्रमात् ॥

If the diarrhœic patient becomes emaciated and also in Chronic diarrhœa, it indicates approaching death. The pulse becomes slow and nearly imperceptible ; slight perspirations appear on the

forehead ; digestion becomes feeble ; the food becomes gradually less and less. The man does not live long.

(4) Apasmara (Epilepsy or any convulsive seizure).

अपस्मारे यदा क्षीणा नाडी तु मन्दरोहिणी ।
नानोपद्रव युक्ता स्यान्मरणाय न संशय: ॥

If the pulse in a convulsive seizure becomes feeble, slow and bounding and if it is accompanied by various complications, death is sure.

The condition probably refers to apoplectic or uraemic convulsion.

(5) Amlapitta (Acid dyspepsia).

अम्लपित्ते च चपला क्षीणा नाडी तु मृत्यवे ।

Ii the pulse in Acid dyspepsia becomes frequent and thready (small), it means death.

The condition no doubt refers to a hæmorrhage from a duodenal ulcer.

(6) Arochaka (Loathness).

क्षीणा नाडी वक्रगति चारुची दोषसंयुता ।
नाशायाचिरकालेन छर्दि रोगे च चञ्चला ॥

If the pulse in Loathness becomes feeble and curved and is attended with triple derangement, it indicates death in a short time. It is such in a quick pulse in vomiting.

The condition refers to some chronic organic disease of the stomach (probably cancer) with loathness as a prominent symptom.

(7) Arsa (Piles).

अर्शोगेतु चेत् क्षीणा सदा मन्दगति स्तथा ।
तथाल्पशोथो गण्डे स्यान्नानोपद्रव संयुत:
स याति शीघ्रं पञ्चत्वं यदि विवर्ण फुसफुसा ॥

If the pulse in Piles becomes thready (small) and always slow, if the cheek becomes slightly oedematous, if various complications arise and if the lungs are affected, the patient dies.

The condition evidently refers to chronic Bleeding Piles ending in severe anæmia with some lung complication (this may be tuberculous).

(8) Ambata (Acute Rheumatic Fever).

आमवातेऽतिमूर्च्छा चेत् तेनस्यात् क्षीणा विग्रह: ।
क्षीणाग्निर्बहुदोषाद्य: कदाचिन्नैव जीवति ॥

If the pulse in the acute rheumatic fever becomes very small (thready) and becomes very weak, if there is loss of appetite and

if there are signs of multiple derangements, the patient is never going to live.

The condition refers to cardiac failure in a case of rheumatic fever.

(9) Udararoga and Sotharoga (Ascites and Dropsy).

उदरेच तथा शोथे स्थिरा सूक्ष्मातिशीतला ।
नानोपद्रवसंयुक्ता मरणायैव केवलं ॥

If the pulse in Dropsy and Ascites becomes thready, very soft and nearly imperceptible and if the condition is attended with various complications, they are only for death.

The conditions probably refer to the last stage in atrophic cirrhosis of liver or may refer to chronic parenchymatous nephritis. Both of them are common in India.

(10) Unmada (Insanity).

उन्मादे सूत्रवत्क्षीणा चपला कुटिला यदि ।
दृक्षीणस्य मरणं कदाचित् कर्हिचित् क्वचित् ।

If the pulse in Insanity becomes thready (small), frequent and curved in an emaciated patient, it rarely indicates death.

(11) Upadansa (Chancre).

मरणश्चोपदंशे च तथा क्षीणा च चञ्चला ।

If the pulse in chancre becomes feeble and frequent, it indicates death.

The condition evidently refers to phagedenic sores which were so common in pre-antiseptic days.

(12) Urusthambha (Paraplegia).

ऊरुस्तम्भे च चपला क्षीणा सूक्ष्माति सूत्रवत् ।
मेदोरोगे च धमनी पुष्टा नाशाय चेत्स्थिरा ॥

If the pulse in Paraplegia becomes frequent, feeble, small and thready, it indicates death. In obesity the pulse, if large and very slow, indicates death.

The first condition indicates a terminal stage in transverse Myelitis. The second condition means the last stage in an advanced fatty heart.

(13) Karnaroga and Nasaroga.

कर्णरोगेऽपि चेत् क्षीणा नानोपद्रव संयुता ।
नाडी नश्यत्यस्य रोगे तथा नासागदेऽपिच ॥

In Karnaroga (ear-disease), if the pulse becomes feeble and is accompanied with various complications, it indicates death. In a disease of the nose, the same pulse characteristics mean death.

In the first condition we are evidently dealing with meningeal complication in Otitis media. The second condition is probably nasal diphtheria or may be again some meningeal complication in some septic condition of the nasal fossæ.

(14) Kamala (Hypertrophic cirrhosis of the liver ?) and Halimaka (malignant Jaundice, acute yellow atrophy of the liver).

स्फीतगण्डेऽल्पतास्यस्य कृशमत्यन्तरस्थिरं ।
चीणाचेत् कामलास्तु यदि मन्दगतिस्तथा ॥
तेन स्यान्नयनादीनां वैवर्णं चीनता तथा ।
मरणाय त्वतिचीणा शिरा मन्दा हलीमके ।
देहस्यचातिवैवर्ण्यं चीणस्य मरणं ध्रुवं ॥

In Kamala if the swollen face becomes thin and the body becomes emaciated, the pulse becomes feeble and slow, and if the eyes become pale and body weak, they are for death. In Halimaka, if the pulse becomes very weak (small) and slow and if the body becomes pale in a weak patient, the death is inevitable.

(15) Kasa (Cough).

कासे नाडी यदा चीणा तेन स्यात् चीणविग्रहः ।
चपला सर्वदाचेत् स्यान्मरणं तु न संशयः ॥

If the pulse in Cough becomes very feeble and always remains frequent and the body becomes emaciated, the conditions indicate death.

The condition evidently indicates chronic bronchitis in its terminal stage.

(16) Gulmaroga (Abdominal Tumour).

गुल्मरोगेऽति चपला चीणा नानोपसर्गिता ।
मरणाय मूत्रकृच्छ्रेऽश्मर्य्यां चीणाति चञ्चला ॥

In Gulma, if the pulse becomes very frequent, weak and is variously complicated (by other signs and symptoms), it indicates death. In Strangury and Nephrolithiasis, if the pulse becomes feeble and very frequent, it indicates death.

(17) Chhardi (Vomiting).

नाशायाचिरकालीन छर्द्दिरोगे च चञ्चला ।
चीणा मूत्रसमा चेत् स्यात् स्थित्वा स्थित्वा यदा गतिः ॥

In Vomiting if the pulse becomes quick, weak and thready and beats very slowly, it indicates death in a short time.

(18) Trishnaroga (Thirst).

तृष्णारोगेऽपि चेत् क्षीणा मन्दगतिस्तत: ।
अत्यन्त शैत्यगमनं मरणाय न संशय: ॥

In Thirst (symptomatic of some disease), if the pulse becomes weak (small), infrequent and very soft, it indicates death.

(19 Daharoga (Paraesthesia of burning).

दाहेऽपि च यदा क्षीणा चपला कुटिला यदि ।
अन्त:शून्या वरारोहे मरणायैव केवलं ॥

If the pulse in Daharoga becomes feeble (small), frequent and curved and empty (that is, of very low volume), it indicates death.

The condition evidently refers to the last stage of Polyneuritis, when it becomes complicated with Tachycardia and Dyspnoea. (See Monographic Medicine, Vol. 6, p. 850).

(20) Dhanustambha (Lockjaw), etc.

धनुस्तम्भ हनुस्तम्भ पक्षाघातापतानका: ।
अर्दिता क्षेपका: कार्या दृढ़ाणां यत्नसाधका: ॥

The *Dhanustambha* (tonic contraction of the body like a bow), lockjaw, hemiplegia, *apatanaka*, *ardita* and *kshepaka* (convulsive seizures) in a strong man are curable if properly treated.

(21) Pandu (acute catarrhal Jaundice).

क्षीणा सूत्रसमा नाडी वैवर्ण्यं तेन तैर्युतं ।
मरणाय क्लमं विद्यात पाण्डुरोगे तथा तत: ॥

If the pulse in *Pandu* becomes small and thread-like and the body becomes pale, they indicate death.

(22) Vatarakta (anaesthetic Leprosy).

वातरक्ते यदा नाडी चपला स्पन्दनान्विता ।
नानोपद्रव संयुक्ता मरणञ्चततस्तत: ॥

If the pulse in *Vatarakta* becomes frequent and is accompanied by various complications, it indicates death.

(23) Bhagandara (Fistula in ano).

भगन्दरे शिरा क्षीणा तथा चाञ्चल्यवाहिनी ।
मरणं चोपदंशे च तथा क्षीणा च चञ्चला ॥

If the pulse in *Bhagandara* becomes thready and frequent, it indicates death... (See under Upadansa).

(24) Masurika (Small-pox).

मरणाय मसूर्यास्तु स्थिरा क्षीणा शिरा तथा ।
नानोपद्रव संयुक्ता तथान्तः शोष सम्मिता ॥

If the pulse in Smallpox becomes barely perceptible and small and it is accompanied by various complications, it means death; it is then attended with terminal swelling (of the body).

(25) Mutrakrichchra (Strangury —under Gulmaroga.

(26) Mutraghata (Suppression or Retention of Urine).

मूत्राघातेऽतिमूत्रे तु क्षीणा चाञ्चल्यवाहिनी ।
मरणाय श्रीगदेपिस्थिरा क्षीणा च शीतला ॥

In Suppression of Urine and Polyuria, if the pulse becomes feeble and frequent, it indicates death. Similarly a feeble, soft and nearly imperceptible pulse in a female disease indicates death.

(27) Medoroga (Obesity). See under Urustambha.

(28) Meha (Urethritis, Gonorrhoeal urethritis).

क्षीणा नाडी यदा मेहे रोगे स्यात् क्षीण विग्रहः ।
अल्पाशनो विवर्णश्च कदाचिन्नैव जीवति ॥

If the pulse becomes feeble (small) in an emaciated patient who eats little and has become pale, he will never live.

(29) Yakshma (Pulmonary Tuberculosis).

यक्ष्मा रोगेऽपि चेत् क्षीणा चपला मूत्रवद् यदि ।
अत्यल्पंभक्षणं देहे कार्यं भवति मृत्यवे ॥

If the pulse becomes small, frequent and threadlike, the food becomes very small in amount and the working of the body becomes very small (that is, all the bodily functions are more or less impaired), they are so for death.

(30) Raktapitta (Hæmatemesis).

रक्तपित्तेऽपि अपला क्षीणा नाडी यदा ततः ।
शिरोग्रहः यदा नेत्रवैकृतं मरणाय च ॥

If the pulse becomes frequent and small, and if there be swooning and opacity of the cornea, then they are for death.

(31) Vayuroga.

नाना गतिमती नाडी क्षीणा वायौ मृतिः खरः ।

If the feeble pulse shows various kinds of beating, it indicates early death.

(32) Visuchika (Cholera).

विसूच्यां चेत् स्थिरा क्षीणा शिरा वक्रा तदा मृतिः ।

If the pulse is nearly imperceptible, feeble and curved in Cholera, it indicates death.

(33) Vidradhi (Cellulitis).

विद्रधौ मन्दगमना नाडी सूक्ष्मा च मृत्यवे ।

If the pulse becomes infrequent and small, it indicates death.

(34) Siroroga (Headache).

शिरोरोगेऽति चपला क्षीणा क्षीणाश्च वर्मणः ।

मरणाय.....

If the pulse becomes quick and feeble and if the body becomes emaciated, it indicates death.

(35) Striroga (under *Mutraghata*).

(36) Swasaroga (Asthma).

श्वासरोगेऽतिचपला क्षीणा तेनाल्प भोजनं

मरणाय.....

If the pulse becomes frequent and weak and the food becomes small in quantity, then the patient is going to die.

(37) Halimaka (malignant Jaundice), (under Kamala).

(38) Hikka (hiccough)

हिक्का रोगेऽति चपला क्षीणा चेत् यदि सूत्रवत् ।

तदा तव मृतिर्ज्ञेया..... ॥

If the pulse becomes very quick, feeble and thready, it indicates death.

MIDWIFERY IN ANCIENT INDIA

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III

On the Purification of the Semen and Blood

A man cannot procreate, if his semen be deranged by vayu, bile and phlegm, if it be polluted and emits a cadaverous smell (*kunapa*), granthi (gland-like), or has undergone decomposition, and resembles pus, or has become thin or scanty in amount, or emits the smells of urine and faeces. The different causes produce differnt results, as will be seen in the table below :—

	Semen	Derranged by	Results.
1.	,,	Vayu	Pain and color of Vayu.
2.	,,	Bile	,, ,, Bile.
3.	,,	Phlegm	,, ,, Phlegm.
4.	,,	Blood	Red, profuse, painful, smell of dead body.
5.	,,	Vayu and Phlegm	Gland-like.
6.	,,	Bile and Phlegm	decomoposed and pus-like.
7.	,,	Vayu and Bile	Weak and scanty semen.
8.	,,	Vayu, Bile & Phlegm, or, Sannipatic	Smell like that of urine and faeces.

Of these, 4 to 8 are difficult of cure, 7 is incurable, and the rest are curable.

Similarly the three *dosas* and blood, separately, and in combination, pollute the menstrual blood also. These causes also produce barrenness. The result is also known as before ; the *dosas* produce peculiar kind of pain and color. In cases of women, 4 to 8 are incurable, and the rest are curable easily.

अथात: शुक्रशोणितशुद्धि नाम शारीरं व्याख्यास्याम: ।

वातपित्तश्लेष्मकुणपग्रन्थिपूतिपूयक्षीणमूत्रपुरीषरेतस: प्रजोत्पादने न समर्था भवन्ति । तेषु वातवर्णवेदनं वातेन । पित्तवर्णवेदनं पित्तेन । श्लेष्मवर्णवेदनं श्लेष्मणा । शोणितवर्णवेदनं

कुणपगन्ध्यनल्पं रक्तेन । ग्रन्थिभूतं श्लेष्मवाताभ्यां । पूतिपूयनिभं पित्तश्लेष्मभ्यां । क्षीणं प्रागुक्तं पित्तमारुताभ्यां । मूत्रपुरीषगन्धि सान्निपातेनेति । तेषु कुणपग्रन्थिपूतिपूयक्षीणरेतसः कृच्छ्रसाध्याः । मूत्रपुरीषरेतसस्त्वसाध्याः साध्यमन्यच्चेति ।

आर्त्तवमपि त्रिभिर्दोषैः शोणितचतुर्थैः पृथग्द्वन्द्वैः समस्तैश्चोपसृष्टमबीजं भवति तदपि दोषवर्ण-वेदनादिभिर्विज्ञेयं । तेषु कुणपग्रन्थिपूतिपूयक्षीणमूत्रपुरीषप्रकाशमसाध्यं साध्यमन्यद्भवति ।

In the first three *dosas* of the semen, treatment should be by oleaginous medicines and fomentations, or by means of injections through urethra. If the semen smell like that of a dead body, you should prescribe ghee, or Dhataki flowers (*Woodfordia floribunda*), catechu, pomegranate, and Arjuna bark (*Terminalia Arjuna*) infusions or the medicines contained in the *Salsaradi* group boiled in ghee. If the semen emits the smell like that of a gland, you should use infusion of Pathira alone, or with ashes of Palasa (*Butea Frondosa*) wood. If it be like pus, ghee boiled with Parusa (*Grewia Asiatica*) and *Vatadi* (Ficus) group should be used. If the semen be weak, the same medicines would be useful. If it has the smell of faeces, use infusion of Citraka (*Plumbago Zeylanica*), Venamula (*Andropogan muricatum*) and assafœtida.

In seminal diseases, use oily medicines, emetics, purgatives by means of oils and infusions and lastly by injection through the urethra. In the females, to rectify the 4 *dosas* of blood, use first oleaginous medicines and emetics, and lastly infusions and ghee. If the smell of the menstrual blood be like that of a gland, use infusion of Patha (*Stephania hernandifolia*), Trikatu (Black and long pepper and dry ginger), and Kuduci (*Holarrhena antidysenterica*). If it be smelling like that of pus, use camphor or infusion of santal wood. In the other *dosas*, *e g.*, 7 and 8, treatment should be similar to that of the semen. It is good to take as food boiled sali rice, barley, wine, flesh, etc., and other anti-bilious food-stuffs.

भवन्ति चात्र ।

तेष्वाद्यान् शुक्रदोषांस्त्रीन् स्नेहस्वेदादिभिर्जयेत् ।
क्रियाविशेषैर्मतिमांस्तथाचोत्तरवस्तिभिः ॥
पाययेत नरं सर्पिर्भिषक् कुणपरेतसि ।
धातकीपुष्पखदिरदाडिमार्जुनसाधितं ॥
पाययेदथवा सर्पिः शालसारादिसाधितं ।
ग्रन्थिभूते शठीसिद्धं पालाशे वापि भस्मनि ॥

परुषकवटादिभ्यां पूयप्रख्ये च साधितं ।
प्रागुक्तं वक्ष्यते यच्च तत् कार्य्यं क्षीणरेतसि ॥
विट्प्रभे पावयेत् सिद्धं चित्रकोशीरहिङ्गुभिः ।
स्निग्धं वान्तं विरिक्तञ्च निरूढमनुवासितं ॥
योजयेच्छुक्रदोषार्त्तं सम्यगुत्तरवस्तिना ।
विधिमुत्तरवस्त्यन्तं कुर्य्यादार्त्तवशुद्धये ॥
स्त्रीणां स्नेहादियुक्तानां चतसृष्वार्त्तवार्त्तिषु ।
कुर्य्यात् कल्कान् पिचूंश्चापि पथ्यान्याचमनानि च ॥
ग्रन्थिभूते पिबेत् पाठां त्र्यूषणं वृक्षकाणि च ।
दुर्गन्धे पूयसङ्काशे मज्जतुल्ये तथार्त्तवे ॥
पिबेद्भद्रश्रियः क्वाथञ्चन्दनक्वाथमेव च ।
शुक्रदोषहराणाञ्च यथास्वमवचारणं ॥
दोषाणां शुद्धिकरणं शेषास्वप्यार्त्तवार्त्तिषु ।
श्लक्ष्णं शालियवतं मद्यं हितं मांसञ्च पित्तलम् ॥

Characters of good semen.—Pure semen is colored white like glass, liquid in consistency, cooling to touch, sweet to taste, and smelling like honey.

स्फटिकाभं द्रवं स्निग्धं मधुरं मधुगन्धि च ।
शुक्रमिच्छन्ति केचित्तु तैलक्षौद्रनिभन्तथा ।

Characters of good menstrual blood.—If it be red like pure blood as the blood of the hare, or colored red like that of the juice of the lac, if it does not stain the clothes, then it is pure menstrual blood.

शशासृक्प्रतिभं यत्तु यद्वा लाक्षारसोपमं ।
तदार्त्तवं प्रशंसन्ति यद्वासो न विवर्ज्जयेत् ॥
तदेवातिप्रसङ्गेन प्रवृत्तमनृतामपि ।
असृग्दरं विजानीयादतोऽन्यद्रक्तलक्षणात् ॥
असृग्दरो भवेत्सर्व्वः साङ्गमर्दः सवेदनः ।
तस्यातिवृत्तौ दौर्व्बल्यं भ्रमो मूर्च्छा तमस्तृषा ॥
दाहः प्रलापः पाण्डुत्वं तन्द्रा रोगाश्च वातजाः ।
तरुण्या हितसंविद्यास्तदल्पोपद्रवं भिषक् ॥
रक्तपित्तविधानेन यथावत्समुपाचरेत् ।
दोषैरावृतमार्गत्वादार्त्तवं नश्यति स्त्रियाः ॥
तत्र मत्स्यकुलत्थाम्लतिलमाषसुरा हिताः ।
पाने मूत्रमुदश्विच्च दधि शुक्तञ्च भोजने ॥

चीर्णा प्रागीरितं मलक्षणचिकित्सितं ।

तथाप्यत्र विधातव्यं विधानं नष्टरक्तवत् ॥

Derangement of menstruation.—If the discharge of blood occurs during the intervals of menstrual periods, then it is known as *asrigdara*. In this disease the quality of the blood differs from the normal blood of menstruation. She complains of pain and lassitude all over her body. If the haemmorrhage be profuse, complications occur by the deranged vayu, and she shows symptoms of weakness :—fainting, dark vision, thirst, heat delirium, paleness, drowsiness, *etc.* If diseases occur with slight complications in a young girl, you should treat it as a case of *raktapitta*. If the *dosas* obstruct the passages, *i.e.*, when the menstrual blood is not discharged, then it is known as *Suppression or Retention of meness.* In such a case, prescribe fish, kulatha, pulse masakalaya, acids, dry cow-dung, dahi, whey for food, and wine and cow's urine as her drink. The treatment of weak and scanty discharge of blood or dysmenorrhœa may consist of the medicines recommended for suppression of mens. So the treatment of polluted semen and blood is described.

Preparation of the couple for successful impregnation.

A healthy female of pure blood or ova should behave like a Brahmacharini from the first day of her mens. She must avoid sleep and dream during the day, the use of collyrium to her eyes, shedding of tears, bath and annoniting, massage with oil, paring nails, running, loud speech or laughter, hearing loud sounds, scratching on the ground, walking in the air, and all works which cause labour. If these forbidden practices are indulged in by the woman during her menstrual period, the child generated during the period will be sleepy, blind, squint, sorrowful, leper, having defetive nails, brown colored teeth, lips, palate and tongue, restless, talkative or garrulous, deaf, and insane. Therefore these acts must be avoided during the menstrual time. She should lie on a seat of *kusa* grass for three days., eat *havisya* or boiled sun-dried rice and ghee on her palm, or earthen pot or leaves, and must avoid the company of her husband. On the fourth day, she should take purificatory bath, wear clothes and ornaments, and after offering *svastibachana* or receiving benediction, should see her husband first, for after such baths, the child, if born during this menstrual period, would resemle the man whom she sees first.

एवमदृष्टगर्भः गुडार्शवा, सती प्रथमदिवसात्प्रभृति ब्रह्मचारिणी दिवास्वप्नाञ्जनाश्रुपातस्नानानुलेपनाभ्यङ्गनखच्छेदनप्रधावनहसनकथनातिशब्दश्रवणावलेखनानिलातपान् परिहरेत्। किङ्कारणं। दिवा स्वप्नात्: स्वापशीलोऽञ्जनादन्धो रोदनादिकृतदृष्टिः स्नानानुलेपनादृष्टःस्वशीलशीलाभ्यङ्गात् कुष्ठी नखापकर्त्तनात् कुनखी प्रधावनाद्बली हसनाच्छ्यावदन्तोऽहितानुभिः प्रलापी चातिकथनादतिशब्दश्रवणादधिरोऽवलेखनात् खलतिर्भीरुताप्रसेवनादुन्मत्तो गर्भो भवतीत्येवं तान् परिहरेत्।

Garbhadhana :—Then the ceremony of Garbhadhana is to be performed by the priest for the good of the child. The husband should, in his turn, obesrve the vows of Brahmacharya or celibacy for one month and should meet his wife on the fourth day of her mens, after taking *sali* rice, ghee and milk as his food. The wife too, after observing Bramhacharya for a month, should on that day rub herself well with oil, and eat her meals with masakalaya (*Phaseolus mungo*). The husband keeping his faith in the Vedas, and being desirous of a male child, should, on that night, or on the 6th, 8th, or 12th day of her menstrual period, satisfy his wife. From the 4th to the 12th days, both inclusive, the son, if begotten, would be more fortunate, rich and strong, according as the act of copulation takes place later than the fourth day onward. If the birth of a daughter is wished by the husband, the copulation should take place on the odd days, *i.e.*, on the 5th, 7th, 9th and 11th days. A male child is born when even days are selected for intercourse with his wife. Sexual intercourse from the 13th day onwards is said to be unwise, and is forbidden.

ततोऽपराह्णे पुमान् मासं ब्रह्मचारी सर्पिःस्निग्धः सर्पिःक्षीराभ्यां शाल्योदनं भुक्त्वा ब्रह्मचारिणीं तैलस्निग्धां तैलमाषान्नाहारां नारमुपेयाद्रात्रौ सामादिभिरभिविश्वास्य विकल्पेवच्चतुर्थ्यां षष्ठ्यामष्टम्यां दशम्यां द्वादश्यां चोपेयादिति पुत्रकामः।

एषूत्तरोत्तरं विद्यादायुरारोग्यमेव च।
प्रजासौभाग्यमैश्वर्य्यं बलञ्च दिवसेषु वै॥

अतः परं पञ्चम्यां सप्तम्यां नवम्यामेकादश्याञ्च स्त्रीकामः त्रयोदशीप्रभृतयोऽनिन्द्याः।

Effect of intercourse during the fordidden days of mens.

If the husband enjoys with his wife on the first day of mens, he becomes short-lived; and if she concieves, then discharges of blood occur during delivery. So also for the second day, and if the child is born as the result of intercourse on the second day, it dies in the confinement room. Similary for the third day,

for then the child becomes disfigured or short-lived. But if on the fourth day, a full-grown child is expected ; it will be well formed and long-lived. But so long as the discharges continue, the semen does not become prolific or successful. As anything thrown against a current cannot go forward and is stopped, so the semen or sperm, not being able to enter the uterus is thrown back. Therefore during a menstrual cycle, the first 3 days must be strictly observed, as the rate of flow of blood is greatest during these 3 days, and after the 12th day is passed, the husband should refrain from copulation until after a month.

अत्र प्रथमे दिवसे ऋतुमय्यां मैथुनगमनायुष्यं पुंसां भवति। यश्च तत्राधायतं गर्भः स प्रसवमानो विमुच्यते। द्वितीयेऽप्येवं सूतिकागृहे वा। तृतीयोऽप्येवमसम्पूर्णाङ्गोऽल्पायुर्व्वा भवति। चतुर्थेतु सम्पूर्णाङ्गो दीर्घायुश्च भवति। अत्र प्रवर्त्तमाने रक्ते वीजं प्रविष्टं गुणकरं भवति यथा नद्यां प्रतिस्रोतःप्लाविद्रव्यं प्रक्षिप्तं प्रतिनिवर्त्तते नोर्द्धङ्गच्छति तद्वदेव द्रष्टव्यं। तस्मान्नियमवतीं त्रिरात्रं परिहरेत्। अतः परं मासादुपेयात्।

Medicine to help conception of a male.—If conception takes place as the result of cohabitation during the fruitful period (4th to 12th day), and if she be desirous of a male child, let her take in her right nostril as a snuff 3 or 4 drops of Laksana or Vatasunga or Sahodva or Visvadeva (*Terminalia bellerica*), formed into a paste with milk. This snuff must not be spitted out. The conception is successful if the different factors become suitably combined, just as a plant germinates and grows well if the season, soil, water and seed be good and coincide in a proper way. The son formed of such a combination becomes strong, intelligent, long-lived, rich, obedient to father, and good-natured.

लक्ष्मगर्भायाश्चैतेष्वहःसु लक्षणावटशुङ्गासहदेवाविश्वदेवानामन्यतमं क्षीरेणाभियुज्य त्रींश्चतुरो वा विन्दून् दद्याद्दक्षिणे नासापुटे पुत्रकामायै नच तान्निष्ठीवेत्।

ध्रुवञ्चतुर्णां सान्निध्याद्गर्भः स्याद्विधिपूर्व्वकः।
ऋतुक्षेत्राम्बुबीजानां समयादङ्कुरो यथा॥
एवं जाता रूपवन्तो महासत्त्वाश्चिरायुषः।
भवन्त्यृणस्य भोक्तारः सत्पुत्राः पुत्रिणो हिताः॥

Complexion of the child.—The internal heat is the cause of color. If during conception, the major part of the heat be

combined with water,—the fœtus becomes fair ; If the major part of heat becomes combined with earthy matter,—the child becomes black. If the major part of that heat combines with earth and ether, the color of the child becomes medium-coloured, *i.e.*, intermediate between fair and black, or muddy, blackish, or brown ; if it combines with water and ether, the child is *gourasyam* or fair complexioned, or little short of fair color. Some say that the color of the child depends upon the color of the food supply used during the term of pregnancy. If the heat does not unite with the power of vision, the child becomes blind from its birth. If the heat unites with blood, red eyes are produced ; if it unites with bile, yellow eyes, and if with vayu, the child squints.

तत्र तेजोधातुः सर्व्ववर्णानां प्रभवः स यदा गर्भोत्पत्तावव्धातुप्रायो भवति तदा गर्भं गौरं करोति पृथिवीधातुप्रायः कृष्णं पृथिव्याकाशधातुप्रायः कृष्णश्यामं तोयाकाशधातुप्रायो गौरश्यामं। यादृग्वर्णमाहारमुपसेवते गर्भिणी तादृग्वर्णप्रभवा भवतीत्येके भाषन्ते। तत्र दृष्टिभावमप्रतिपन्नं तेजो जात्यन्धं करोति। तदेव रक्तानुगतं रक्ताक्षं पित्तानुगतं पिङ्गाक्षं श्लेष्मानुगतं शुक्लाक्षं वातानुगतं विकृताक्षमिति।

Impotency.—As the ghee melts by the contact of heat, so the ovum or germ of the female is discharged by the copulation with her husband. If the uterine vayu divides the seed into two parts, we get the twins formed. If the fecundation takes place as the result of very minute quantity of semen, the child is called *Asekya*. Erection of his penis occurs when he sucks semen. The boy born in a septic uterus is called *saugandhika* ; his strength augments by the smell of the organs of generation. One who performs unnatural acts in her anus, *i.e.*, practises sodomy with a female, is called a *kumbhika*. One who becomes excited and copulates by seeing similar acts in others is called *Irsaka* (Envious). If the male copulates with a female like a female during her menstrual period, and if a boy be born afterwards, it resembles a female in manners and shape and is known as a *Sanda*. If a girl be born of such an intercourse, then she resembles a male in her manners and customs. The *asekya*, *saugandhika*, *kumbhika*, and *irsaka* get semen produced in their testicles, but the *sanda* has no semen. Thus by the unnatural acts their seminal vessels become dilated and that causes the turgescence of penis. The character of the child is determined by the food, conduct and hankering of the parents. If two

licentious women copulate with each other, and if their germs be discharged in that act, the fœtus, formed, has no bone (*fleshy mole* ?). If after the purificatory bath, the female enjoys a male in a dream, then she may become pregnant by the deranged Vayu ; the female considers herself to be pregnant and the signs of pregnancy become manifest month by month (*false pregnancy*). That fœtus, if born is devoid of paternal influence, and the fœtus often becomes abnormal in shape, as like swollen scorpion, gourd, etc. Such pregnancy is caused by the sin of the female.

भवन्ति चात्र ।

घृतपिण्डो यथैवाग्निमाश्रितः प्रविलीयते ।
विसर्पत्यार्त्तवं नार्य्यास्तथा पुंसां समागमे ॥

वीजेऽन्तर्व्वायुना भिन्ने द्वौ जीवौ कुक्षिमागतौ ।
यमावित्यभिधीयेते धर्म्मेतरपुरःसरौ ॥

पित्रोरत्यल्पवीजत्वादासेक्यः पुरुषा भवेत् ।
स शुक्रं प्राप्य लभते ध्वजोच्छ्रायमसंशयम् ॥

यः पूतियोनौ जायते स सौगन्धिकसंज्ञितः ।
स योनिशेफसौगन्धमाघ्राय लभते वलम् ॥

स्वे गुणेऽब्रह्मचर्य्याद्यः स्त्रीषु पुंवत् प्रवर्त्तते ।
कुम्भीकः स च विज्ञेयईर्ष्यकं शृणु चापरम् ॥

दृष्ट्वा व्यवायमन्येषां व्यवाये यः प्रवर्त्तते ।
ईर्ष्यकः स च विज्ञेयः षण्डकं शृणु पञ्चमं ॥

यो भार्य्यायामृतौ मोहादङ्गनेव प्रवर्त्तते ।
ततः स्त्रीचेष्टिताकारो जायते षण्डसंज्ञितः ॥

ऋतौ पुरुषवद्यापि प्रवर्त्तताङ्गना यदि ।
तत्र कन्या यदि भवेत् सा भवेन्नरचेष्टिता ॥

आसेक्यश्च सुगन्धी च कुम्भीकश्चेर्ष्यकस्तथा ।
सरेतस्त्वमी ज्ञेया अशुक्राःषण्डसंज्ञितः ॥

अनया विप्रकृत्या तु तेषां शुक्रवहाः सिराः ।
हर्षात् स्फुटत्वमायान्ति ध्वजोच्छ्रायस्ततोभवेत् ॥

आहाराचारचेष्टाभिर्यादृशीभिः समन्विती ।
स्त्रीपुंसौ समुपेयातां तयोः पुत्रोपि तादृशः ॥

यदा नार्य्यावुपेयातां वृषस्यन्तौ कथञ्चन ।
मुञ्चन्तौ शुक्रमन्योन्यमनस्थिस्तत्र जायते ॥
ऋतुस्नाता तु या नारी स्वप्ने मैथुनमावहेत् ।
आर्त्तवं वायुरादाय कुक्षौ गर्भं करोति हि ॥
मासि मासि विवर्द्धेत गर्भिण्या गर्भलक्षणं ।
कललं जायते तस्या वर्ज्जितं पैतृकैर्गुणैः ॥
सर्पवृश्चिककुष्माण्डविकृताकृतयश्च ये ।
गर्भास्त्वेते स्त्रियाश्चैव ज्ञेयाः पापकृता भृशं ॥

Effect of unsatisfied cravings of females.

If the desires of a pregnant female be not satisfied, the Vayu becomes eccentric and produces children who become hump-backed, lame in their extremities, dumb, *minmin*, (a snuffler), smattering etc. Vayu also becomes eccentric if the parents be atheist or if they had done impious acts in their previous births, and for that reason, the fœtus may be malformed.

गर्भो वातप्रकोपेण दौहृदे चावमानिते ।
भवेत् कुब्जः कुणिःपङ्गुर्मूको मिण्मिण एव च ॥
मातापित्रोस्तु नास्तिक्यादशुभैश्च पूराकृतैः ।
वातादीनाञ्च कोपेन गर्भो विकृतिमाप्नुयात् ॥

Cause of non-excretion of refuse matters in the fœtus in uterus.

The fœtus in the intra-uterine life does not defæcate or urinate, either because the excreted materials are very scanty in amount, or due to the fact that Vayu having not entered the intestines as yet. The mouth of the fœtus is closed by the membranes, and its throat by phlegm, and the outlets are closed by vayu ; it is for this reason the child cannot cry in the uterus.

मलाल्पत्वादयोगाच्च वायोः पक्वाशयस्य च ।
वातमूत्रपूरीषाणि न गर्भस्थः करोति हि ॥
जरायुणा मुखेच्छन्ने कण्ठे च कफवेष्टिते ।
वायोर्म्मार्गनिरोधाच्च न गर्भस्थः प्ररोदिति ॥

Jatismara.—The fœtus breathes, becomes restless and sleeps during the similar states of the mother. The formation of the body, the shedding of teeth and their reappearance, and the absence of hairs on the palm of the hand and sole of the foot are natural acts. If those who are well-versed in the sacred

books constantly brood over these phenomena, and if in them good qualities preponderate, they become *Jatismara i. e.*, remember the action and incidents of their former births. The animated beings reap the fruits of their actions done in a previous life and they easily acquire those natural qualities, with which they were habituated in their previous births.

निश्वासोच्छ्वासस्तोभस्वप्नान् गर्भोऽधिगच्छति ।
मातुर्निश्वसितोच्छ्वासस्तोभस्वप्नसम्भवान् ॥
सन्निवेशः शरीराणां दन्तानां पतनोद्भवौ ।
तलेष्वसम्भवो यश्च रोम्णामेतत् स्वभावतः ॥
भाविताः पूर्व्वदेहेषु सततं शास्त्रबुद्धयः ।
भवन्ति सत्वभूयिष्ठाः पूर्व्वजातिस्मरा नराः ॥
कर्म्मणा चोदितो येन तदाप्नोति पुनर्भवे ।
अभ्यस्ताः पूर्व्वदेहे ये तानेव भजते गुणान् ॥

(*To be continued*).

Health and Hygiene

GOODWILL—WHAT IT MEANS :

Its Effect on Health

(By W. A. F. Ruble M.D.)

Goodwill and good health are inseparably linked together in the divine plan for mankind, and why should we not comprehend it, grasp it for ourselves, and make it a reality on our own lives and experiences ?

There are two great principles underlying our well-being and happiness. These are faith and good-will. The whole duty of man is said to be comprehended in these two principles, faith toward God and goodwill to our fellow creatures. Lack of these or the possession of their opposites, fear and ill will, have brought upon mankind all of its misery and disease.

Wherein, then, does goodwill have to do with health ? It will doubtless be agreed that the loss of one's reason is the worst calamity that can befall a person. Almost without exception the greatest characteristic of madness, and one of its first symptoms is disregard for others, self-absorption, and introspection. In fact, there are more mad people in the world than those that are in the asylums People wholly engrossed in their own affairs, introspective, selfish, are as unbalanced as many who are in asylums. Insanity and other bodily diseases often begin with introspection. Neurasthenia, hypochondria, melancholia, and whole trains of physical ills are but the fruit of selfishness, absorption in one's own feelings and interests and disregard for other's rights and happiness. So fully is this recognized by medical man that one of the first things a "borderline" case is advised to do is to find interest that will take his mind off himself. About the only way this tendency can be checkmated is to follow the sentiment of the hymn, "Do something for somebody every day." The spirit of goowill will neutralize a world of blues, sorrowful forebodings, and anxieties. The habit of goodwill to others will dispel a host of ills. A good motto is, "Look up, not down ; forward, not backward ; out, not in ; and lend a hand.

The ideal condition, physically, is to be quite oblivious to the workings of our own bodies, to be wholly occupied in the welfare and happiness of others. An animal or a baby is quite unconscious of its own existence. One of the most interesting studies is to watch a young child "come to himself," as we might say. For weeks he may recognize external things and will give evidence of such recognition. He moves his members unintentionally. Soon he begins to recognize that he has appendages and can move them, first incoherently, later purposefully. More and more

he comprehends his own personality, feelings, and sensations. If all his desires and sensations are gratified he becomes selfish, disregards others' rights, and becomes a miserable piece of humanity, a burden to himself, and repulsive to others. On the other hand, if trained to recognize the rights and wishes of others, and to minister to them, his happiness is supreme, and his usefulness to society everywhere appreciated.

This may seem like sermonizing, but it is an underlying principle of health and happiness. No one sees so many cases of loss of enjoyment of life through selfishness as a doctor. No one appreciates so keenly the necessity of externa linterests in combating diseases of mind and body as he. If every doctor could, by some mysterious means, cause a few dozen of his patients to use the telescope in viewing others' needs and then set about relieving them rather than view their own inner feelings microscopically, and spend their time in a vain endeavour to satisfy them, the world would be a thousand times better off.

MELANCHOLICS

Now is a good time to begin to form the habit of good will. There are thousands of people much worse off than we are. Hunt them out and help them. Incidentally you will find your own ills and and anxieties quickly disappearing. If I could say to all neurotics, neurasthenics, melancholics, "Seek out some people worse off than yourself, spend as much time doing for and thinking of their welfare as you spend on yourself," much of the misery and sorrow of this world would be mitigated.

There is no circumstance in this world as unfortunate as to be surrounded by conditions that make it unnecessary for one to exert oneself in the behalf of other surroundings that minister continuously to one's personal and selfish interests and desires. The writer recalls a case of a young lady whose life was almost ruined because of indulgent parents and friends. She was not too strong physically. Her parents, being in easy circumstances, pampered her in every conceivable manner. Never had she been obliged to consider the needs or desires of others. She thought entirely of her own comfort. She studied her own pleasures. She lived for her own gratification. She was a self-centred weakling. Lack of exercise and pampered tastes and desires brought on physical weakness. Symptoms of failing health came on. She studied her own feelings. Her parents studied them also, and slaved to relieve them. She became a tyrant to her own feelings, desires and bodily fears. In this self-centred state of mind and body, she came into touch with an earnest but engaging social worker, who recognized her condition, took pity on her, enlightened her parents on the real state of their daughter, and by tact, and perseverance succeeded in interesting the unfortunate girl in the poor children of her city. Little by little her

sympathies were enlisted. With this came activities in behalf of distressed cases Finally all her time and means were spent in ministering to the needs of others. Her disposition changed, her selfish cares disappeared, her physical appearance became buoyant and vivacious, and her health returned in full vigour, all because her interest had been turned from herself, and became rewarded by good health and good cheer to herself.

Such an experience as this is in store for all. There is never a time or condition but you can find some one worse off than you are yourself. Do not allow another's misfortune to depress you, but set about doing something to help the unfortunate one to forget his misfortune, and in so doing you will heal your own hurt and restore your own health. There is nothing in this world that pays such dividends as ministering to the needs of others. So let us all make our greatest investment of good will, being assured that it will return to us a hundredfold in happiness and health.—*Good Health.*

Reviews and Notices of Books

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Amar-Jeebani —We have received a copy of the above auto-biography by Sj. Bholanath Banerjee, B.E., I.S.E., retired Executive Engineer, P.W.D. for review.

The book is published by Sj. Harendranath Chatterjee, M.A. from 2, Horokumar Tagore Square, Calcutta, consisting of Pp. 226, D. C. 16 M.O. with an introduction by Babu Ramananda Chatterjee, M.A., the erudite editor of Prabasi and Modern Review Price Re. 1-4 only; to be had from all reputable booksellers or at 2, Horokumar Tagore Square, Calcutta.

The book opens with the child-life of the author at his native village and presents to the reader a very vivid picture of student life of Bengal 50 years ago, specially the interesting period spent in a village school under a Gurumahasaya. It is instructive and interesting to read these chapters as they tell us very frankly how a stern determination matched with a resolute will can overcome all obstacles in the way to progress, even if a man is adversely circumstanced. Yet the writing is never prosaic nor is it void of wit and humour even in the midst of extreme pathos.

The chapters dealing with the author's service-life read like a series of interesting travel-stories, as he had to make an extensive tour throughout Bengal, Assam, Behar and Orissa and occasionally to other important places outside these provinces. The reader is presented here with many historical information along with a beautiful nature paint, possible only for

a good philosopher. Above all, the pathetic struggle of an independent soul, compelled to serve an unsympathetic Government comes home to every reader in a very lurid light His feeling relieved after retirement and shaking off of all grandeur of official life reads almost like an expaciation, which appeals to every heart. The author is frank and simple, has kept nothing secret and it is this simplicity of heart matched with a good style and method of arranging and presenting the subject matter before the reader that the book reads like a novel of romance and it might well be said of it that "Truth is stranger than fiction."

The book contains much that could be learnt by the present generation, specially the students. who cannot manage to prosecute their studies at a cost less than Rs 40 or 50 a month, and it would be a news to them that a student of the author's type could do so with a monthly scholarship of Rs. 10 only.

The book is full of interesting subjects and instructions. The binding, paper and printing are all that could be desired and in our opinion the book will have a wide popularity.

Salyatantra Samuccaya—By Vamadeva Misra, Professor of Surgery, Government Ayurvedic School, Patna. Printed by R. P. Sinha at the Khadgavilas Press, Bankipur, 1929 Price Rs. 2 only.

It is a treatise on Surgery compiled by the author from the authoritative works on Ayurveda, a list of which is given in the book. It consists of fifty chapters which cover the entire field of Surgery, *viz.*, origin of Surgery, qualification of a surgeon, methods of Surgical operation, description of surgical instruments and applliances, caustics, actual cautery, and leeches ; Practice of Surgical operation, diagnosis, inflammation, blood-letting, treatment of wounds and abscess, fracture and dislocation, and other surgical diseases, etc. Three plates of surgical instruments are inserted in the book, but their source is not mentioned. This is a text book for students, and as colleges and schools of Ayurveda are being established, text books are urgently needed to impart instruction to the students. The illustrations of instruments, given in the "Surgical Instruments of the Hindus" might be utilised by the students to form an adequate idea about the surgical practice of the Hindu surgeons. Addition of so many figures would have enhanced the price of the book. Incorporation of modern methods of treatment should be gradually introduced to bring the treatise up-to-date. In the second edition, which we hope, will soon be required, these omissions would be remedied. We praise the author for the trouble he has taken for the production of the book which, we are confident, will be adopted as a reliable text book for our schools and colleges.

News & Notes

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RESOLUTIONS

PASSED AT THE

ALL-INDIA MEDICAL CONFERENCE

SIXTH SESSION

Held at Lahore, 27th and 28th December, 1920

RESOLUTION No. 1.

This Conference is of opinion that to meet the medical and sanitary needs of the civil population of the country no medical service constituted on the present system is required ; but, pending the realisation of this ideal, as a temporary measure this Conference is further of opinion that a civil medical service be created for each province, the incumbents to be appointed on a temporary basis.

RESOLUTION No. 2.

This Conference is of opinion that the civil appointments should be entirely dissociated from the military side.

RESOLUTION No. 3

This Conference is of opinion that the transfer of I. M. S. and I. M. D. officers to the civil side should be stopped at once, and I. M. S. and I. M. D. officers in civil employ should be made to revert to the military side.

RESOLUTION No. 4.

This Conference is of opinion that the competitive examination for recruitment to the Indian Medical Service, which has been held in abeyance for the last fourteen years, should be revived early, that it should be held annually at a convenient centre in India, and that all entrants thereto must possess a qualification registrable in India.

RESOLUTION No 5.

This Conference is of opinion that there should be no distinction between Indian and non-Indian officers of I. M. S. with regard to pay, overseas allowance, passage, and other concessions.

RESOLUTION No. 6.

This Conference is of opinion that the appointments of Military Assistant Surgeons in the I. M. D. should be open to all Indians.

RESOLUTION No. 7.

Whereas the medical departments in the provinces are transferred subjects, this Conference is of opinion that the Civil Medical Services in

the province contemplated in the resolution above be placed under the control and direction of a Minister of Health who should preferably be a medical man.

RESOLUTION No. 8.

This Conference is of opinion that the recruitment to the W. M. S. be made largely from the Indian Medical women, and that proper provisions be made at an early date for giving facilities to Indian women to qualify for such posts.

RESOLUTION No. 9

This Conference is of opinion that energetic steps should be taken by Government, as well as by the various authorities in charge of public hospitals, to recruit Indian women on the nursing staff of hospitals.

RESOLUTION No. 10.

(*i*) This Conference condemns the policy of Government of locating the Central Medical Research Institute at Dehra Dun in spite of the unanimous protest of the independent medical profession throughout the country and urges Government to appoint a small committee including representatives of the medical profession and of the medical faculties of the Universities (*a*) to report on the most suitable University centre for locating the proposed Institute, and (*b*) to recommend the constitution of the Governing Body of the Indian Research Fund Association and of the Selection Board for recruitment in the Medical Research department.

(*ii*) This Conference further resolves that no steps be taken to give effect to the Fletcher Committee's recommendations unless and until the Committee already suggested has submitted its report.

(*iii*) This Conference emphatically protests against the reservation of appointments in the Medical Research departments for the members of the Indian Medical Service and requests the members of the Central Legislatures to move the Government of India to remove such reservation.

(*iv*) This Conference is of opinion that the Government of India should institute medical research fellowships in the different medical colleges and hospitals in India.

(*v*) This Conference recommends that no appointments in the Medical Research department or in the Central Medical Research Institute be made till the Selection Board for recruitment in the Indian Medical Research department or under the Indian Research Fund Association is constituted.

(*vi*) This Conference protests against the low scale of pay fixed for the Assistant Professors for the proposed Public Health Institute

at Calcutta and urges Government to so fix the scale as to make the Assistant Professors real colleagues of the Professors.

RESOLUTION No. 11.

This Conference recommends to the principals of medical colleges and the superintendents of hospitals in India to start, periodically, special postgraduate classes at reasonable fees for medical practitioners, or to give facilities to such practitioners to work in the laboratories and wards during the regular hours of instruction.

RESOLUTION No. 12.

This Conference calls upon the members of the provincial legislatures to move the Councils of Medical Registration to have an elected non-official majority in them with an elected President.

RESOLUTION No. 13.

This Conference expresses its gratitude to the members of the Indian Legislatures for taking interest in medical problems and those affecting the profession and more particularly for their refusal at the last session of the Assembly to sanction the appointment of the Commissioner of Medical Council, thus upholding the dignity of the Indian Universities and the Indian Medical graduates; and requests them to continue taking the same interest in medical problems when they come up before the Legislatures for discussion.

RESOLUTION No. 14

(a) This Conference recommends to the Government that an All India Medical Council be formed on the lines of the British Medical Council for the purpose of co-ordinating and developing medical studies in the different provinces and for registration of medical practitioners. The Conference regards it as essential that the constitution, powers and functions of the Council be determined by a committee on which shall be representatives of the Universities, medical institutions and non-official medical practitioners.

(b) That pending the creation of such a Council, this Conference recommends the necessity, as a temporary measure, of appointing immediately an All-India Medical Board consisting of representatives of Universities from their medical faculties—one from each such University—and two nominees of the Government of India for determining and supervising medical qualifications and standards in Indian Universities.

RESOLUTION No. 15.

In case a satisfactory solution with regard to the recognition of Indian medical degrees by the General Medical Council is not arrived at, this

Conference calls upon the Central and Provincial Governments and Legislatures to restrict the registration of British medical qualifications in India.

RESOLUTION NO. 16.

This Conference condemns the recent attitude of the British Medical Council towards Indian medical degrees and is emphatically of opinion that the appointment of a Commissioner of medical qualifications and standards, as recommended by G. M. C., is not in consonance with the best interests of medical education in India.

RESOLUTION NO. 17.

This Conference urges all medical practitioners to encourage the use of drugs, sera, vaccines, surgical dressings, surgical instruments and other appliances, etc. of Indian manufacture.

RESOLUTION NO. 18.

This Conference urges upon the Government of India and Central Legislatures the immediate necessity of taking adequate steps to introduce measures for the licensing of chemists and druggists and for providing a suitable number of public analysts in all provinces.

RESOLUTION NO. 19.

This Conference is of opinion that the laboratory or laboratories which are proposed to be established by the Government for testing the standardisation of drugs, sera, etc. should be located in the important provincial cities and not at Kasauli as proposed

RESOLUTION NO. 20.

This Conference is of opinion that grants be made from provincial revenues for instituting scholarships for post-graduate medical study and research abroad.

RESOLUTION NO. 21

This Conference urges upon the licensing bodies in India to take early steps to make five years the minimum period of study for the medical course.

RESOLUTION NO. 22.

In view of the high rate of mortality and the excessive prevalence of preventible diseases throughout India, this Conference is of opinion that statutory provisions be made in the Acts for adequate representation of medical men on the local bodies, district boards, municipalities and legislatures.

RESOLUTION NO. 23.

This Conference is emphatically of opinion that in all matters relating to medical education, administration and public health brought before the legislature, the Indian Medical Association should be consulted.

RESOLUTION No. 24.

This Conference is of opinion that in order to secure proper medical aid in rural areas suitable subsidies be granted to medical practitioners to encourage them to settle in practice in these areas on a panel system.

RESOLUTION No. 25.

This Conference desires to point out to the authorities that the present system of allowing all persons without discrimination to obtain medical aid in spite of restricted accommodation in the hospitals gives facilities to the rich and keeps out the poor and deserving patients.

RESOLUTION No. 26.

This Conference urges upon the legislatures the immediate need of taking steps towards the early introduction of measures for Health Insurance on a panel system.

RESOLUTION No. 27.

With a view to provide facilities for post-graduate training and research, this Conference urges upon the Government and the local bodies the immediate necessity of allowing private medical practitioners opportunities and facilities for working in all the hospitals, and that the staff of these hospitals should no longer be kept reserved for the Medical services.

RESOLUTION No. 28.

This Confrence is of opinion that steps be taken for proper representation of independent medical practitioners on the Senate of the Univirsities.

RESOLUTION No. 29.

This Conference resolves that the Bill proposed to be introduced by the Honble Dr. Rama Rao in the Council of State be referred to the Central Executive Committee of the Indian Medical Association for disposal and requests Dr. Rama Rao to withdraw the introduction till the said Central Executive Committee has deliberated on the different clauses of the Bill.

RESOLUTION No. 30.

This Conference places on record its protest against the preferential treatment accorded to the European I. M. S. officers by the Indian Government, as against Indian temporary I. M. S. officers in matters relating to pay and gratuity.

RESOLUTION No. 31.

That the rules and regulations of the All India Medical Association drafted by the Central Executive Committee be adopted with the

exceptions of clauses 11 and 29 referring to the amount of subscription and distribution of funds, and these two questions be referred back to the Central Executive Committee for reconsideration and decision in consultation with the provincial branches.

RESOLUTION No. 32.

Resolved that the name of the All India Medical Association be changed to THE INDIAN MEDICAL ASSOCIATION with the head office at Calcutta.

RESOLUTION No. 33.

This Conference resolves that the following office-bearers of the Indian Medical Association be elected for the next term.

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HONY. JT.-SECRETARIES :

Dr. D. D. Sathaye. | Dr Aghorenath Ghosh.
Dr. Kumud S. Ray.

RESOLUTION No. 34.

This Conference places on record its gratitude for the valuable services rendered to the Association by Dr. G. V. Deshmukh during the tenure of his office as president of the Association.

RESOLUTION No. 35.

This Conference places on record its gratitude to the members of the Reception Committee and of the medical practitioners of the Punjab for enabling the Association to hold the Conference so successfully in the face of great difficulties and offers its thanks to the members of the medical profession of the Punjab for the warm welcome accorded to the delegates and the attention given to them.

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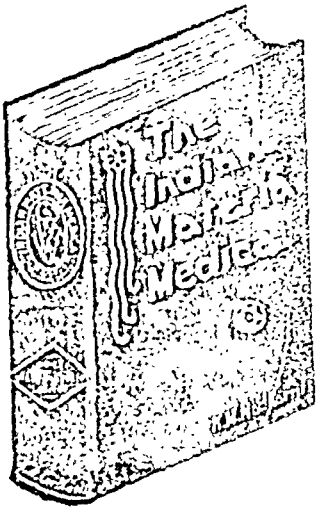

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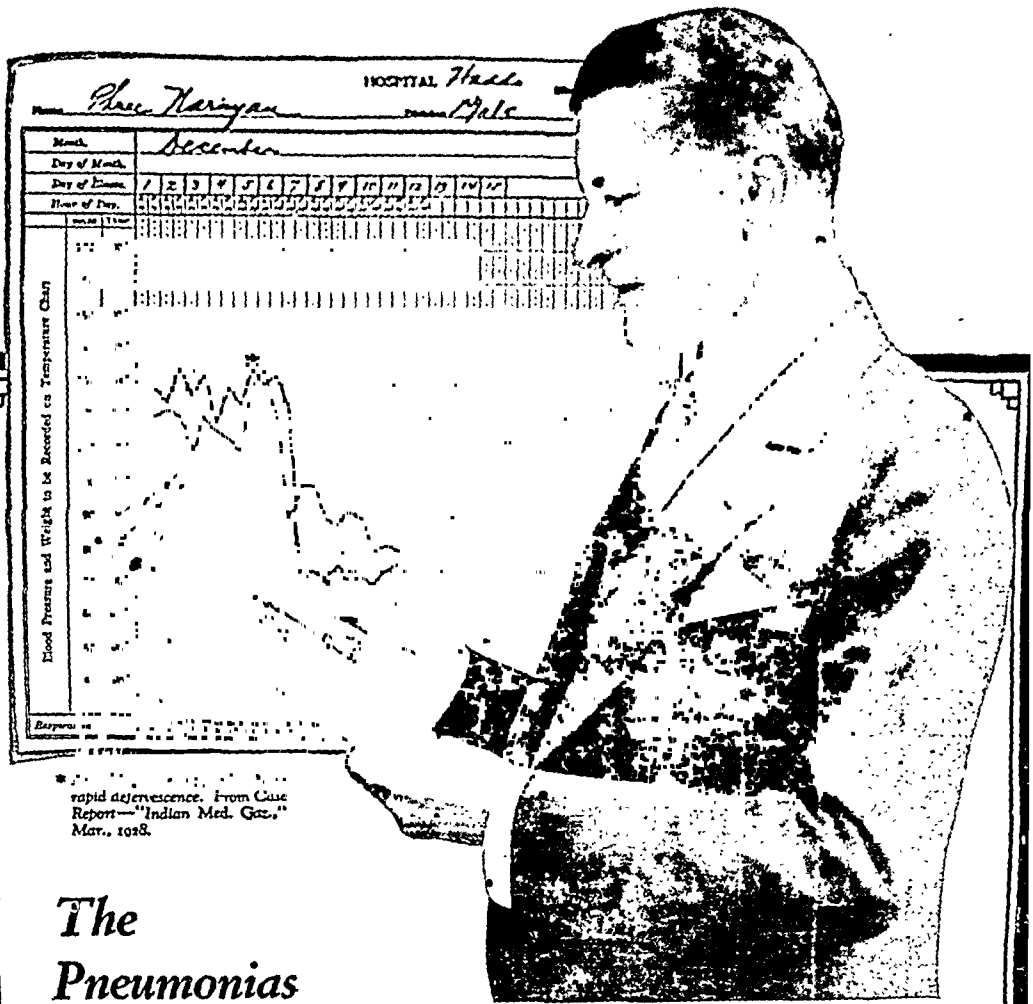

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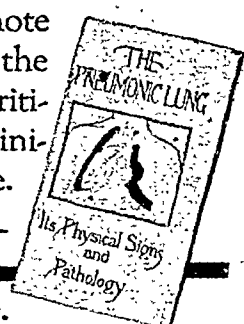

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The Journal of Ayurveda

or the Hindu System of Medicine.

Vol. VI.] April, 1930. [No. 10.

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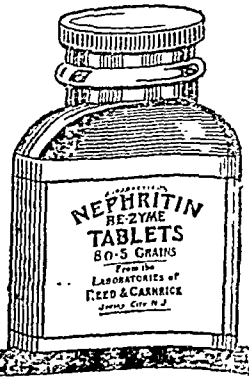

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THE JOURNAL OF AYURVEDA

Vol. VI.] April, 1930. [No. 10.

Ayurvedic Therapeutics

OR

The Theory of Rasa, Veerya, Vipaka and Prabhava

(By Vaidyabhushana Purushottamshastri Hirlekar, Amraoti)*

The two main parts of the Medical Science are Diagnosis and Treatment. Ayurvedic Diagnosis can be understood from its basic theory of Tridosha, and the theory of Ayurvedic Treatment can also be understood with the help of the same Tridosha Theory upon which it is based. But its actual practice requires, in addition, a thorough knowledge of the medical properties of the substances—both medicinal and dietary—to be employed. If the substances are not known by their properties, mere principles of Treatment are useless in practice. What particular substance is the originator of a certain disorder and which of its curer, what substance acts on the particular part of the body and in what way; all these things must be fully taken into consideration, for, without the same, prevention and cure of diseases and restoration of sound health are impossible. This is why Therapeutics has come into existence. Ayurveda clearly details properties of thousands of substances, and no other medical science so far has equalled Ayurveda in this respect. This has even been admitted by its critics.

* Translated from the original Marathi by Ayurvedacharya Pandurang Hari Deshpande, Faizpur, E. K.

This knowledge of the details of properties of substances has brought ease and accuracy in Treatment.

Such description of the medical properties of various substances is abundant in Ayurveda, but it has been alleged that it is not as clear as it ought to be, and an impartial judge should think so. It should, however, be noted that if these properties are tried to be understood with the help of the particular Ayurvedic Terminology, one can easily understand these properties without any ambiguity. It must undoubtedly be admitted that more detailed description of substances and their properties should have been given. But the oriental mode of description is altogether different from that of the present occidental one with which the modern educated people are acquainted. Not only is it without details but it is very terse which has led to various intricacies and ambiguities and at times even came to be regarded as unscientific. The fundamental principles of Ayurveda—Tridoshas—not having been fully realised, it is afloat that the systems of Diagnosis, Anatomy, Physiology, etc., based upon the same principles are also taken to be 'unscientific'. Similarly, the terminology of the science of Ayurvedic Therapeutics not having been fully understood, it is wrongly stated that the properties of substances are based on mere conjectures. This wrong notion has led to negligence of study and disrespect for the Science. The so-called learned and diplomed scientists have been believing that whatever is western is best and acceptable and whatever native is worst and rejectable, and have, therefore, been systematically advising people not to believe in the Oriental Sciences. These so-called rational scientists, while exhorting people against blind faith put in the ancient, have been doing the same thing regarding the new form, when they themselves believe in the new sciences. In one word, it should be said that instead of abandoning the Ayurvedic Therapeutics because it is not understood, it is more advisable to get acquainted with

its Terminology to understand it. Fortunately for us, the westernised vision is now-a-days being replaced by the proper one.

At the outset, it is queried as to by what means these medical properties have been arrived at? At present, new researches are daily going on and with their help analysis of the main elementes of substances has been made and their relation to each other and action upon the human body are ascertained. Was this the ancient system? It does not seem to be so from the available literature, and, if not, naturally then it is asked as to how did Ayurveda arrive at the properties of substances? If this query is not satisfactorily answered, one would hesitate to believe in these properties. Somebody may try to answer this query that the ancient sages clinically experimented upon various substances and noted down the results. Most educated people are accustomed to give this answer. But if minutely thought over, this is not satisfactory. For, if thousands of substances produced in different parts of the world are to be used by their different parts in different diseases and their different stages, by themselves as well as in different mixtures and in their different preparations, such thousands of their accurate properties that are given should not have come to the experience of the ancient physician and there would have been no possibility of a detailed description of them. Even at the climax of human intelligence by which other branches of the Medical Science have at present been developed, it is well nigh an impossibility or at least super-human to arrive at such an experience. Besides, if anybody goes to take clinical experience of a particular substance, is it ever possible to take it at random and then follow the well-known proverb

यस्य कस्य तरोर्मूलं येन केनापि निश्चितम् ।
यस्मै कस्मै प्रदातव्यं यदा तदा भविष्यति ॥ ६ ॥

Whatever may be the times, it is credible to say that thousands of philanthrophists would be ready to sacrifice their own lives for the sake of human welfare. Such a statement may at best find its place in a myth. Thus the Experiment Theory is baseless—untenable. Even experience must be well-founded by some logical and theoretical guiding principle, and the same must be well considered.

Another answer to the above question is that the ancient sages were omnicient and could realize wholly all the creation by the power of their extra-ordinary penance. These sages with their intuition noted down the properties of substances. But this answer is not sufficient to stand to reason and no one would believe in it unless one is over-credulous. Besides, it can be asked, why is not this intuition in the know of even the underlying principles by which the medical properties should have been fixed ? So then the question of the underlying principle remains unsolved, and the viewpoint by which the ancients tried to arrive at these properties must be thought over. While thinking, however, if it be found that their exposition consistently follows some underlying principle and the same can be brought into practice, it will be wrong to call it unscientific or incorrect. Such a sympathetic attitude is essential for an examination of their views.

We do not know in days of yore with whose advice or instigation man or the society began to use substances and how was their consumption developed ; even though this may be an interesting study, this subject mainly concerns with the researches of antiquity. One can conjecture so far, that intensity of appetite might have been the first instigator and then imitation, gestures, inferences, etc. may have added to the already existing number of articles of consumption. Thus the usages of substances were initiated by a natural tendency and on seeing good or bad effects, the curious scientists exerted

in the ascertainment of their accuracy. Soon after they began these efforts, they observed a sort of affinity between the human body and other created things. They came to know that particles of the human body and that of the universal matter were homogeneous. First, they found out similarity in the human and other animal bodies, then in human bodies and the vegetable creation, whereupon they tried to improve upon their usages. At the beginning, blood and flesh of other animals were brought into use for the bodily growth, because of their similarity with the human blood and flesh, but in course of time, they could easily understand that this blood and flesh were produced from the vegetable diet, whereafter these herbs and vegetables came into use. This usage was afterwards seen manifold and naturally classification came into existence. Some substances were seen producing diseases and some curing them, and some were seen of daily consumption and harmless, and with this experience three main classes of substances were formed, *viz.*, (1) daily consumable, (2) disease-producing, and (3) disease-curing. These three classes are styled as *Swasthahita* or wholsome to the healthy, *Kopana i.e.*, disease-producing, and *Shamana, i.e.*, disease-curing. The first are to be used in healthy condition, the second produce disharmony in the main active powers of the body, and the third bring harmony into them. This classification was further developed and more detailed results were seen as to the usages of these substances, such as in different healths, secondly producing different diseases, and thirdly curing different diseases. Not only this, but, on considering the system of natural growth and development of herbs, they came to know that minerals from inside the interior of the soil were the direct cause of their growth and development, and naturally, they began to replace minerals for vegetables. Thus, animals, animal-matter, herbs and vegetables, and minerals, e.g. iron etc., were freely brought into medicinal use.

The above would clearly indicate that the guiding principle of all these experimental efforts was the "Similarity of the human body with the universal creation in its different parts." Some substance may be analogous with the particular substance of some part of the human body ; some may be resembling in construction ; some may have similar bodily functions ; or some may be having the same kind of actions. But one or more amongst these, *viz*, mould, properties, actions, bodily functions, or the original components were noted as the guiding principle for usage.

After having ascertained the relation of the human body with the universal matter at large, researchers began to consider as to how and in what process actions of these substances were experienced. So also, amongst innumerable substances, a classification was necessary according to their actions upon the body and the same was fixed as also inferences based upon them This process or the arrangement is styled in Ayurveda as the "Knowledge of Rasa, Veerya, Vipaka and Prabhava".

Among the substances, more consumed are in the form of eatables. But there are other forms also of their usage, such as enunction, application of plasters, poultice, fumigation, touching, fomentation, enema, nasal administration, etc. The important amongst these is, however, the first, as substances having been eaten and properly digested by the digestive juices, the fluid (chyle) produced from them is assimilated with the blood and thereby helped to the growth or otherwise of the body cells. The description of substances has been given in accordance with this order and the same is found to be quite right.

RASA

(*i.e.*, the first perceptible taste of a substance after it is relished),

Among innumerable substances, every one is sure to be perceived by one or more of six main ways. This

perception by the tongue is styled 'Rasa'. Only these six kinds are always perceptible and, therefore, only six Rasas have been mentioned as seen in various substances. They are :—(1) Madhura (sweet), (2) Amla (sour), (3) Lavana (salt), (4) Tikta (bitter), (5) Katu (pungent), and (6) Kashaya (astringent). Every substance possesses one or more of them in more or less degree or all in a mixed form. But that which is clearly perceived is more present. Such ones can be enumerated six only, and, therefore, Rasas have been given as six only, thus—

रसाः स्वादुम्ल लवण तिक्तोषण कषायकाः ।

.....मधुराः । (चरकः)

This particular class of substances as settled from 'Rasa' gives separate properties, which can, therefore, be separately grouped as "Rasanumeya" (inferable from 'Rasa').

VIPAKA.

After the tongue has perceived in this way some natural relish of the substance and on having chewed it, the substance is swallowed and allowed for digestive action in the stomach and intestines. Thereafter having been acted upon by the digestive juices, it is apt to undergo a transformation. Some substances retain their original taste, others do not, and those which do not, seem to show actions different from those of "Rasanumeya", and then this another perception just as that received by the tongue is also required to be taken into consideration. This another kind is styled "Vipaka". It is divided into three, *viz.*, (1) Madhura (sweet), Amla (sour), and (3) Katu (pungent).

VEERYA.

The substance having undergone this second change on being digested turns into a juice (chyle) and the same, being assimilated with the blood, (or the Rasa Dhatu as per Ayurvedic Terminology) is spread up in the whole

body. This juice (chyle) on having assimilated with the Rasa Dahtu (blood) produces either a heating or a cooling sensation by its own power and creates a corresponding action on the body. This whole-bodily effect of the Rasa Dhatu is styled "Veerya" or energy of the substance. It is divided into two, hot and cold. These two are also sub-divided into three each, which will be considered later on.

PRABHAVA.

While the substance undergoes this third change and effects a cold or hot action, there is seen a certain effect. wholesome or otherwise, on some particular part of the body in some particular way. This is styled "Prabhava" (Special power of actions.) Of course, these actions are innumerable.

In this way every substance undergoes these four stages which are minutely observed and their properties are fixed. This is what is known as "Rasadivijnanam" in Ayurveda, or "Dravyaguna-Shastram" or 'Therapeutics" in common parlance. Every substance having been fully ascertained by these four stages, *viz.*, (1) inferences arrived at from the perception by the organ of taste and its local action (Rasa-Vijnanam), (2) inferences of the properties from Vipaka at the time of digestion. and its local action (Vipaka-Vijnanam), (3) inferences of properties from "Veerya" or the whole-bodily action (Veerya-Vijnanam), and (4) "Prabhava" or special action (uninferable, gives a thorough knowledge of its properties such as will enable us to safely use it on the body. These are the principles which Ayurveda follows in ascertaining the properties of its medical substances.

Original Articles

THE NERVOUS SYSTEM OF THE ANCIENT HINDUS

BY

ASHUTOSH ROY, L.M.S., (Hazaribagh)

(Continued from our last issue)

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Three special "Granthies" (Knots) are specially mentioned to be of great importance in "Yoga". These are situated and named as follows :—

(*a*) Rudra-Granthi is situated at the " Traipur Chakra " (triangular ganglia, ganglia Impar) associated with the "Muladhar Chakra" (Pelvic plexus). Here the "Pingala" fibres are the most powerful.

(*b*) Vishnu Granthi is situated at the "Trikone" (triangular) Chakra associated with the "Anahata" or superficial cardiac plexus. Here the "Sushamna" fibres are the most powerful.

(*c*) Brahma-Granthi is situated at the "Agna chakra" (Ganglia of Ribes). Here the "Ida" fibres are the most powerful.

The three knots are untied by three kinds of yogic exercises as follows :—

Rudra Granthi by Hata-Yoga.
Vishnu Granthi by Pranayam.
Brahma Granthi by Raj Yoga.

Untying of any one of these knots rouses the latent "kundalini" (sleeping). The two lateral chains (Ida and Pingala), reachaing the level of the neck (vishuddha chakra or superior cervical ganglia), each divides into two branches (after entering the carotid canal), the outer forming the carotid and the inner the cavernous plexus (Lalana chakra).

These, says Hindu anatomy, re-unite at the floor of the 4th ventricle at the medulla oblongata known as the "Brahma-dwara" from where they proceed further into the brain (which will be described while discussing the minute structures of the Brain).

body. This juice (chyle) on having assimilated with the Rasa Dahtu (blood) produces either a heating or a cooling sensation by its own power and creates a corresponding action on the body. This whole-bodily effect of the Rasa Dhatu is styled "Veerya" or energy of the substance. It is divided into two, hot and cold. These two are also sub-divided into three each, which will be considered later on.

PRABHAVA.

While the substance undergoes this third change and effects a cold or hot action, there is seen a certain effect. wholesome or otherwise, on some particular part of the body in some particular way. This is styled "Prabhava" (Special power of actions.) Of course, these actions are innumerable.

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The Chakras.

Hindu Anatomy had described two groups of "chakras" or plexuses of nerves, associated with or without ganglias.

(*a*) Spino-sympathetic chakras outside the Brain.

(*b*) Chakras in the Brain.

(*a*) *The spino-sympathetic chakras.*

These are sub-divided into :—

(*a*) Subtle chakras inside the Sushamna

(*b*) Gross chakras outside the Sushamna further subdivided into :—

(i) Spinal chakras or plexuses without ganglia

(ii) Sympathetic chakras with ganglia.

Regarding the subtle chakras inside the spinal column, "Advaita Martanda" by Brahmansuda Swani (quoted by Woodroffe, in his "Serpent Power") gives a very long list of chakras inside the Sushamna.

Modern anatomy has described the following subtle centres inside the spinal cord as follows :—

(*a*) The ciliary-spinal centre, which controls dilatation of the pupil, is located in the lower cervical region.

(*b*) The subsidiary vaso-motor centres are scattered throughout the spinal cord, though the chief vaso-motor centre is situated in the medulla.

(*c*) Centres for involuntary visceral muscles are situated in different localities of the spinal cord, controlling the actions of organic muscles, which produce various kinds of organic actions.

Particular study has been made of those centres in the pelvic region, where are located the centres for defoecation, urination, ejection and gestation.

The Sata-Chakras.

Of these various spino-sympathetic chakras, six important gangliated and non-gangliated chakras are particularly described and known as the "Sata-Chakras", associated with each region in which the body is anatomically divided, *e.g.*, head, neck, chest, upper abdomen and pelvis.

Region of the body.	*Name of the Chakra.*
Head	Agna-Chakra
Neck	Vishuddha Chakra
Chest	Anahata "
Abdomen	Manipur "
Upper pelvis	Svadhisthan "
Lower pelvis	Muladhar

These chakras have been variously identified by modern writers on the subject.

(i) Prof. B. N. Seal considers them as spinal plexuses as follows :—

Muladhar chakra	Sacro-coccygeal plexus
Svadhisthan "	Sacral plexus
Manipur "	Lumbar plexus
Anahata "	Cardiac plexus
Vishuddha "	Junction of spinal cord with Medulla
Bharati "	Cerebellum.

(ii) Dr. Rele considers them as outlying gangliated plexuses connected with the autonymic nervous system as follows :—

Muladhar Chakra	Pelvic plexus
Swadhisthan "	Superior hypogastric plexus.
Manipur "	Solar plexus.
Anahata "	Superficial cardiac plexus.
Vishuddha "	Pharyngeal plexus.
Agna "	Naso-ciliary extension of the cavernous plexus.

(iii) Sir John Woodroffe considers them as subt e centres inside the spine.

(iv) The Revd. Leadbeater states that these chakras are both subtle and gross centres, associated with the spinal cord and the sympathetic as follows :—

Name of Chakra.	*Region of spinal cord where located.*	*Sympathetic chakras.*
Muladhar opposite	4th sacral vertebrae	Coccygeal
" "	1st Lumbar "	" "
Manipur	8th thoracic "	Solar or cardiac
Anahata	8th cervical "	Cardiac
Vishuddha	3rd cervical "	Pharyngeal
Agna	1st cervical "	Carotid

(*v*) *The writer's identification.*

The chakras are both "*Sthula*" (gross) and "*Sukshma*" (Subtle). The gross ones are of two kinds: (a) associated with the spinal nerves without ganglia and (b) associated with the sympathetic with ganglia. The subtle ones are situated in the spinal cord. The same name is used to denote all these three kinds of chakras, belonging to the different regions of the body as follows :—

Name.	*Region of body.*	*Subtle chakra.*	*Gross Sympathetic.*	*Gross spinal.*
Muladhar.	Lower pelvis & Lower extremity.	3rd sacral,	Pelvic plexus.	Sacrococcygeal.
Svadhisthan.	Pelvis proper.	5th Lumbar.	Superior Hypogastric.	Sacral.
Manipur.	Abdomen	8th Thoracic	Solar.	Lumbar.
Anahata.	Chest and upper extremity.	8th cervical.	Superficial cardiac.	Bronchial.
Vishuddha.	Neck	3rd "	Superior cervical Ganglia.	Cervical.
Agna.	Head.	Cerebellum.	Gania of Ribes.	

The location, identification and distribution of the Nerves and the chakras differ according to the authorities consulted by the different writers.

The Ganglias associated with the Sympathetic in modern Anatomy.

(*a*) Vertebral or lateral ganglias in the sympathetic chain.

(*b*) Pre-vertebral or outlying ganglias which may be subdivided into :—

(i) Collateral outside organs,

(ii) Terminal inside organs e. g., Auerbach's plexus, Meissner's plexus, and,

(*c*) Cerebral—anatomically related to cranial nerves and physiologically to structures inside cranium, e. g., sphenopalatine, otic, sub-maxillary, etc.

Gross Ganglia associated with Spinal Nerves.

Each spinal ganglia is associated with the posterior root of a spinal nerve, not mentioned by the ancient Hindus.

General arrangement of a Ganglia.

At each ganglia there is a synapse. The pre-ganglionic fibres end in the ganglionic cells from which fresh post-ganglionic fibres arise.

Functions of the chakras.

According to Gaskel, the vertebral or lateral chain of ganglias are mainly katabolic, while the pre-vertebral or outlying ones are mainly anabolic.

The "Shakti" (force) of a chakra, says Dr. Rele, is efferent para-sympathetic, controlling the activity of a sympathetic plexus.

The "chakras", says Sir John Woodroffe, are centres of "Shakti" (vital energy) or static life-force. These reservoirs of potential energy are converted to dynamic, when the "chakra" acts. The "chakras" are all inside the spine.

"Chakras", says the Revd. Mr. Leadbeater are force-centres or points of connection between the microcosm (human body) and the macrocosm (world at large). All these are continually rotating and absorbing energy from the macrocosm, without which the physical body cannot exist. In the under-developed ordinary man, the movement of the chakras are sluggish, while in the highly developed, the chakras are throbbing and pulsating with vigour and thus there are additional faculties and possibilities (as in yogies).

The explanations of the last two writers are more or less vague and inclined to be metaphysical. The physiological explanations are as follows :—

(*a*) The subtle centres in the spine regulate reflex action. They are the local governors of the different regions of the body, controlled by each segment of the cord.

(*b*) The gross sympathetic ganglias are like so many district officers, who are autonymic in ordinary local matters, but in higher and more important matters, which are referred to the spinal cord, order is communicated to them.

(*c*) The gross spinal chakras act and react against our environments, benign forces being assorted and malignant ones repelled. They are like the foreign departments directly under the Viceroy or the cerebro-spinal subtle centres. Their function is represented by the "Vyan-Vayu" of Ayurveda.

Hindu Names of spinal chakras.		*Location.*	*Names of force of each chakra.*
Prithivi chakras	in	Muladhar	Dakini
Jala chakra	"	Svadhisthan	Rakini
Teja chakra	"	Manipur	Lakini
Vayu chakra	"	Anahata	Kakini
Akash chakra	"	Vishuddha	Sakini
Manas chakra	"	Agna	Hakini
Sahasrar "	"	Brain	Yakshini

The last two are cerebral chakras.

They also supply nerves to the following regions of the body :—

Dakini acts on lower pelvis and lower extremities (Prithvi).

Rakini	"	Pelvis	(Jala)
Lakini	"	Abdomen	(Teja)
Kakini	"	Chest	(Vayu)
Sakini	"	Neck	(Ether)
Hakini	"	Head	(Moon)

Thus the sammohan Tantra says that the forces Dakini etc. are the Shakties (forces) which regulate the "Dhatus" (tissues) in those parts of the body where they are located.

These forces are different manifestations of the dynamic "Kundalini" force in our body called the "Vyan Vayu" of Ayurveda which reacts against our environments as follows :—

Dakini acts and reacts against		Earth
Rakini	"	Water
Lakini	"	Fire
Kakini	"	Air
Sakini	"	Ether
Hakini	"	Celestial bodies (sun, moon etc.)
Yaskhini	"	Soul.

The first five forces "Dakini etc., act on the physical plane, the "Hakini" on the mental plane and the "Yaskhini" on the higher spiritual plane.

Dhyanvindu Upanishad considers the "Bija" (force) of the "Adhar-chakra" (Prithivi chakra) in "Muladhar" as "Vyan-Vayu" of Ayurveda.

Sympathetic chakras.		*Names of force.*
Muladhar,	Pelvic plexus	Apan Vayu
Svadhisthan,	Superior Hypogastric plexus	
Manipur,	Solar plexus	Saman Vayu
Anahata,	Superficial cardic plexus	Pran Vayu
Vishuddha	Superior cervical Ganglia	Udan Vayu
Agna	Ganglia of Ribes	Maha Vayu

The action of the various Vayus.

Vyan Vayu—reacts against our environments and is cerebro-spinal force.

Apan Vayu—is concerned in the process of urination, defœcation, gestation, erection and ejection.

Saman Vayu—is concerned with katabolism and digestion of food material.

Pran Vayu—is concerned with respiration and heart's action.

Udan Vayu—is concerned with speech, deglutition, etc.

Maha Vayu—is the force of the higher brain centres, the lower centres of which are situated as subtle centres inside the Sushumna.

The ancient Hindus believed that each lower centre in the Sushamna has a corresponding higher centre in the brain, like the modern west, *e.g.*, lower sex centre in cord, higher Psychic sex centre in Brain (kama-kala triangle).

Lower Heat-regulating centre in abdomen	Higher heat-regulating centre in corpus striatum.
Lower vaso-motor centres in spinal cord	Higher vaso-motor centre in the floor of 4th Ventricle.

Petals of the Chakras (Sympathetic)

Each Chakra has got different number of petals, from each of which, says Sir John, issues a nerve branch (of communication or of distribution) as follows :—

Mula-chakra—4 petals, as follows :—

Inferior Haemorrhoidal plexus to lower rectum and Anus.
Vesical plexus—to bladder
Prostatic plexus—to prostate
Vagino-uterine plexus—to sex glands.

(*To be continued*).

SNAKE VENOMS :

THEIR THERAPEUTIC USES AND POSSIBILITIES

BY

F. W. FITZSIMONS, F.Z.S., F.R.M.S.,

(*Director of the Port Elizabeth Museum.*)

Snake venoms consist of solutions of modified proteins in variable proportions, some fatty matter and chlorides, phosphates of lime, ammonia and magnesia. But the toxic and other principles which lie in the proteins can only be partially separated and isolated. The more they are studied the more complex they are shewn to be. The toxic properties of all venoms are lowered or destroyed by heat, but not equally so.

The venoms of most of the Cobras, and that of the Sea snakes, remain uninjured at a temperature of 100° C, and they even resist boiling for a short time. When heated to above 100° C, or to prolonged boiling, the venom soon loses all its toxic properties.

The venoms of the Viper or Adder species of snakes are not so resistant. When heated 70° C, their toxic powers diminish, and they are entirely destroyed at 80° to 85° C. Some of the Viperine venoms are even more sensitive to heat.

Liquid venoms are altered and their toxic properties changed and lowered by influence of light, but desiccated venoms are not so affected.

The venom of one species of snake differs from that of another, both in its toxic properties and in the amount of the minimum lethal dose.

Venom, when drawn from the living snake, is slightly acid, due to the presence of a volatile oil which evaporates when the venom is dried.

The object of the oil is to cause smarting and extra-rapid absorption by the tissues of the victim. Dry venoms, when re-dissolved and injected into an animal, do not smart and absorption is slower.

Venoms are not of uniform toxicity all the year round.

When fasting, the poison of snakes becomes increasingly toxic, and less fluid, and it reaches the maximum of toxicity during the hybernating season.

The water content fluctuates from 60 to 80 per cent.; and the yield of dry venom, at different times of the year from the venom of the same snake, varies from 20 to 40 per cent.

Venoms are far from being simple solutions of a few animal poisons.

There are two outstanding types of snake poisons, viz.: Neurotoxins and Hæmorrhagins.

Neurotoxins, when injected subcutaneously into the human subject in non-lethal doses, reduce nervous activity and diminish reflex response.

Certain groups of nerve cells in the medulla exhibit a special susceptibility to its action. The reflex excitability of the medulla, for instance, can be controlled by non-lethal doses of neurotoxins, and at the same time the nerve centres in that organ which control respiration are not affected. But when a lethal injection is given, these latter centres are affected, and respiration ceases; but curious as it may seem, the heart is stimulated and goes on beating after the lungs have collapsed. So strong is this tonic action that the heart can be kept alive for hours if artificial respiration be maintained.

Sir Lauder Brunton, Sir J. Fayrer, Major Elliott have shewn that cobra venoms, even in dilutions of one in ten million, give increased tone to the muscles of the heart and arteries.

It has also been definitely ascertained that cobra venoms cause a rise of blood pressure.

All these pathological effects vary both in intensity and in their nature according to:

(1) the size and frequency of the non-lethal dose of venom,
(2) the blending of neurotoxins from different species of cobras, and
(3) modifying the properties of venoms by heat and chemical agents.

A lethal dose of venom, which contains neurotoxin in excess, rapidly induces coma and collapse of the lungs. The Cobra and Mamba are typical examples of snakes whose venoms are highly neurotoxic in their effects on animal life.

Hæmorrhagins, as its name implies, is a blood poison, the primary action of which is upon the elements of the blood and the blood vessels. In a lesser degree, these venoms depress the various nerve centres and nerve endings, and cause a fall in blood pressure. In carefully graded doses they produce

beneficial sedative effects upon irritable nerve centres ; and at the same time a tonic action both mentally and physically, which seems to be maintained.

The continued sub-cutaneous injection of carefully attenuated venoms of any kind over a long period of time does not cause harmful after-effects or unpleasant re-actions, as is the case with nerve depressant drugs of mineral and vegetable origin.

Hæmorrhagins are dominant in adder and viper venoms as well as in some of the Colubrine snakes, but they, too, differ quite widely in their pathological effects on the vascular and nervous systems.

There are many other species of snakes, the venoms of which vary considerably from those of both the true cobras and adders, when introduced into the bodies of animals. The Boomslang is an outstanding example.

The pathological effects in Man of the venoms of the Viperine snakes also differ in accordance with the nature and quantity of venom which has been injected. For instence, twice a lethal dose of Puff Adder venom will cause death in the human subject with the minimum of œdema and hæmolysis. This is owing to there being sufficient neurotoxin in the venom to produce rapid death.

On the contrary, should a lesser, but nevertheless, fatal dose of the venom be given, extensive œdema, hæmolysis and discoloration will occur which is primarily due to the action of the hæmorrhagins in the venom.

There are numbers of poisonous drugs prescribed in medical practice which, in medicinal doses, produce certain tonic and other beneficial effects ; and such is the case with snake venoms. Luminal and Veronal, for instance, given in proper doses, are valuable drugs ; but in excess they are poisons.

The injections of varying non-lethal doses of snake venoms into the human body *do not merely produce a protein reaction.* Their effects are very far-reaching, and the results of these we have now been able to control and direct by :

(1) Regulating the dosage.
(2) Careful blending of the venoms.
(3) Elimination of the undesirable constituents of the venoms.
(4) The modification of the toxic properties of the venoms.

The venoms of the different species of snakes have a great many more constituents than have been found by chemical

examination. They are definitely known to contain one or more of the following :

(1) An antifibrin ferment.
(2) A very strong fibrin ferment.
(3) A proteolytic ferment.
(4) Cytolysins of various kinds which are capable of acting upon the phagosites, red corpuscles, endothelial cells, nerve cells, the medulla, etc. The nature of the influence of these Cytolysins is determined by the dose of venom injected.
(5) Agglutinin, which influences the red blood corpuscles, etc.
(6) An anti-bactericidal body in the nature of anti-complements.
(7) Neurotoxins with affinities for nerve endings in the muscles, nerve cells, nerve centres, especially those in the medulla.
(8) Agents which greatly increase tone to the cardiac muscle, and the muscles of the walls of the arteries. These tonic effects can be controlled and regulated by the right blending of venoms under proper administration.

Properties which

(a) Raise the blood pressure, viz., Neurotoxins.
(b) Lower the blood pressure, viz., Hæmorrhagins.
(c) Increase the fibrin content of the blood.
(d) Alter the rate of coagulation of the blood.
(e) Materially increase the number of phagosites and red blood corpuscles.

No venom, however, is known to possess all the above properties ; and the wide range of symptoms and effects produced in Man after being bitten by a snake are due to this cause, and also to the varying quantities of venom introduced into his body.

Apart from their established use in the production of anti-venom sera for the treatment of snake bite, the poisons of snakes have other uses and possibilities. For instance :

As far back as October, 1908, Dr. John Turner published an article in the "Journal of Mental Sciences," London, shewing that the average rate of coagulability of the blood is greater than normal in Epileptics, and that the rate is quickened some hours before and during a seizure, and for as long as 24 hours afterwards. That for 24 to 48 hours after a fit there is a distinct retardation of the rate of blood coagulation.

Dr. William Alden Turner, in his Morrison Lectures of 1910, claimed to have attained the same result.

Dr. Ralph H. Spangler also studied the rate of coagulability of the blood in 18 cases of epilepsy with the aid of Bogg's Coagulometer, with results similar to those of Turner's.

Experimenting with a snake venom rich in hæmorrhagins, Spangler found that, after six months' treatment on Epileptics, he was able to increase the time of blood coagulation from three to six minutes. This discovery is significant, considering the fact that the normal period of coagulation of the blood is about seven minutes.

An epileptic in Texas was bitten by a snake of the adder family and not having received a lethal dose, recovered, and was afterwards free from epileptic seizures ; and the freedom from the former attacks became permanent. The authenticity of this case was established by Dr. Self, of Clarith, and the fact was brought to the notice of Dr. Spangler, who subsequently used the crude venom of the same species of snake on people suffering from epilepsy. The results he obtained, even with this crude untreated venom, were highly gratifying.

A report in detail was published by Spangler in the "New York Medical Journal" of September 3rd, 1910, of eleven cases of epilepsy so treated. Of this number he was able to keep six in continuous observation. He reports briefly of this course of venom treatment extending over periods varying from six to fifteen months, according to the nature of each case as follows :

Case 1.—Major attacks at frequent intervals Recovery under venom treatment complete.

Case 2.—Patient had two to five major attacks weekly for 14 years. Not been able to work for six years. Under venom treatment fits were reduced to one every three to four months. Works regularly at his employment.

Case 3.—Had fits for eight years. Under venom treatment completely recovered.

Case 4.—Fits for four years. Under venom treatment seizures disappeared and did not return.

Case 5.—Had fits for six years. Under venom treatment fits died out and did not return.

Case 6.—Had fits for ten years. Under venom treatment fits ceased and have not returned.

Again, on September 14th, 1912, in the "New York Medical Journal," Dr. Spangler reported a further eight cases, giving, as before, the full data of "Previous personal history," "Epileptic history," "Nature of attacks" and "Effects of the venom treatment." The report is too long for full publication, but the results, in brief are as follows :

Case 1.—One fit monthly for six years ; then for two years two to four major attacks weekly. Became mentally deranged. Under venom treatment has only had five minor attacks in 10 montha. Now mentally restored and works regularly.

Case 2.—Fits for 12 years. Latterly one major seizure every two to three weeks. Was under venom treatment for 10 months. During that period has only had four petit-mal attacks.

Case 3.—Child of nine years. Major fits in series since age of seven months. Speech paralyzed. Could not walk unaided. Under venom treatment fits etirely eliminated. Can speak, walk and play normally.

Case 4.—Fits at two week periods with series of major attacks at frequent intervals. During seven months' treatment with venom had only three minor fits. Wonderfully improved mentally and physically.

Case 5.—Petit-mal seizures two to three times weekly for two years. After a course of venom treatment fits were permanently eliminated.

Case 6.—Major attacks one to two weekly for six years. Mentally unbalanced. After venom treatment fits were reduced to minor seizures, with much longer intervals.

Case 7.—Fits for eight years. Major seizures often in series of 12 within 24 hours. After starting venom treatment had only two mild attacks in five months.

Case 8.—Fits for three years, two to three major attacks weekly—sometimes in series. Minor attacks in between. Mentally deranged. After venom treatmeut fits eliminated and sanity restored.

MIDWIFERY IN ANCIENT INDIA

BY

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(Continued from our previous issue)

अथातो गर्भावक्रान्ति शारीरं व्याख्यास्यामः ।

सौम्यं शुक्रमार्त्तवमाग्नेयमितरेषामप्यत्र भूतानां सान्निध्यमस्त्यणुना विशेषेण परस्परोपकारात्-परस्परानुग्रहात् परस्परानुप्रवेशाच्च ।

तत्रस्त्रीपुंसयोः संयोगे तेजः शरीराद्वायुरुदीरयति । ततस्तेजोऽनिलसन्निपाताच्छुक्रं च्युतं योनिमभिप्रतिपद्यते संसृज्यते चार्त्तवेन । ततोऽग्निसोमसंयोगात् संसृज्यमानोगर्भो गर्भाशयमनुप्रतिपद्यते । क्षेत्रज्ञो वेदयिता स्प्रष्टा घ्राता द्रष्टा श्रोता रसयिता पुरुषः स्रष्टा गन्ता साक्षी धाता वक्ता योऽसावित्येवमादिभिः पर्य्यायवाचकैर्नामभिरभिधीयते दैवसंयोगादक्षयोऽव्ययोऽचिन्त्योभूतात्मना महान्वक्षं सत्त्वरजस्तमोभिर्द्देवासुरैरपरैश्च भावैर्वायुनाभिप्रेर्य्यमाणो गर्भाशयमनुप्रविश्यावतिष्ठते ।

तत्र शुक्रबाहुल्यात्पुमानार्त्तवबाहुल्यात्स्त्री साम्यादुभयोर्नपुंसकमिति । ऋतुस्तुद्वादशरात्रं फवति दुष्टार्त्तवः ।

अदृष्टार्त्तवाप्यस्तीत्येके भाषन्ते ।

भवन्ति चात्र ।

पीनप्रसन्नवदनां प्रक्लिन्नात्ममुखद्विजां ।
नरकामां प्रियकथां स्रस्तकुक्ष्यक्षिमूर्द्धजां ॥
स्फुरद्भुजकुचश्रोणिनाभ्यूरुजघनस्फिचं ॥
हर्षौत्सुक्यपराञ्चापि विद्यादृतुमतीमिति ।
नियतं दिवसेऽतीते सङ्कुचत्यम्बुजो यथा ॥
ऋतौ व्यतीते नार्य्यास्तु योनिः संव्रियते तथा ।
मासेनोपचितं काले धमनीभ्यान्तदार्त्तवं ॥
ईषत्कृष्णं विगन्धञ्च वायुर्योनिमुखं नयेत् ।
तद्वर्षात्द्वादशात् काले वर्त्तमानमसृक् पुनः । *Susruta Samhita.*

THE REAL CAUSE OF PREGNANCY.

If a man of pure semen copulates with a woman having healthy vagina and uterus, and of pure blood during her menstrual period, and if the ejected sexual sperm meet and mix with the blood germ and reach inside the uterus and if the soul enters into the product of this combination by its own wish, then pregnancy is said to

take place. The embryo thus formed, if properly nourished by food which is satma and nursed carefully, develops into a [illegible] formed, strong, beautiful child which is delivered in time. So according to lord Atreya the causes of this [illegible] are the father, the mother, the soul, and the satma and the food, [illegible] own colour, smell, touch, and sound. And the food, satma called satva, is the cause of the relationship of these factors. But Kumarasita Bharadvaja objected and said : "Neither father, nor mother, nor soul, satma, nor food and drink is the cause. Nor the mind comes from another world to enter into the embryo. For had it been so, then many parents anxious for a child would have copulated to give birth to a son or a daughter as they liked. And then no parents would have been childless, and would not have cried for a child ; so the parents cannot be the cause. Again, how can the soul produce its likeness ? Even if this be granted, the question arises whether a born or unborn soul gives birth to the soul of foetus." ?

If you answer—a born soul,—then it cannot be ; for a soul which is born, cannot again take its birth at the same time. Neither can an unborn soul give birth to a soul ; for an unborn soul has no reality, has no existence, and so how can it beget its likeness ? So the soul cannot be the cause. Even supposing that a soul can give birth to another, then if soul had really the power, it would have entered the uterus it liked best, and would not have cared for the uterus of the lower animals wilfully ; for the soul likes to see himself as Lord, omnipotent or able to go anywhere, capable of assuming any form, brilliant, strong, speedy, beautiful, noble, healthy, young and omnipresent or living for ever. Had satma been a cause, only those who use satma ought to have child ; but practically we see that many of them long for a child, whereas even those who do not observe satma are often found to be favoured with children. Neither can the faetus be due to food or chyle, for every human being eats food, but every man does not get children born of him. Nor can it be said that those who take good and nutritious food, as meat-juice of goat, kid, deer, peacock, cow's milk, curdled milk, ghee, honey, oil, saindhava salt or rock-salt, cane juice, moong (Phaseolus mungoo) and good rice do get children, and those who live upon non-nutritious or insufficient food such as syama rice, smaller variety of wheat, kodo and koradusuna or bad rice, roots of vegetables, should not be able to beget children ; but

we find that both the classes of parents may or may not be blessed with children. Neither can it be said that the mind which is a product of satta property comes from another world and enters the body of the foetus ; for had it been so, the child would have remembered the incidents of his previous births and existence, *i.e.*, retained the memory of a past life which he lived before. The fact that it does not recollect anything disproves the migration of the mind. Then Lord Atreya replied, no, you are mistaken ; all these are cause, but when they act in concurrence, conception takes place ; therefore these may be called causes of pregnancy. The mother is the cause, for from her the following structures of the foetus originate : *viz.* skin, blood, muscles, fat, navel, heart, pancreas, liver, spleen kidney, uretar, bladder, stomach, large intestine, small intestine, rectum. The father is also the cause, for from him originate hairs, moustache, nails, teeth, bones, vessels, nerves and ligaments and semen. The soul is also the cause, for from its presence the product of conception acquires the title of living being.

खुड्डीका गर्भावक्रान्तिः ।

अथातः खुड्डीकां गर्भावक्रान्तिं शारीरं व्याख्यामास्य इतिह स्माह भगवानात्रेयः ॥ १ ॥ पुरुषस्यानुपहतरेतसः स्त्रियाश्चाप्रदुष्टयोनिशोणितगर्भाशयाया यदा भवति संसर्ग ऋतुकाले । यदा चानयोस्तथैव युक्तयोःसंसर्गे तु शुक्रशोणितसंसर्गमन्तर्गर्भाशयगतं जीवोऽवक्रामति सत्त्वसम्प्रयोगात् तदा गर्भोऽभिनिर्व्वर्त्तते ॥ २ ॥ स सात्म्यरसोपयोगादरोगोऽभिसंवर्द्धते सम्यगुपचारैश्चोपचर्य्यमाणस्तुतः प्राप्तकालः सर्व्वेन्द्रियोपपन्नः परिपूर्णसर्व्वशरीरो बल-वर्ण-सत्त्व-संहनन-सम्पदुपेतः सुखेन जायते समुदायादेषां भावानाम् ॥ ३ ॥ मातृजश्चायं गर्भः पितृजश्चात्मजश्च रसजश्चास्ति च सत्त्वसंज्ञमौपपादिकमितिहोवाच भगवानात्रेयः ॥ ४ ॥ नेति भरद्वाजः । किं कारणं हि न माता न पिता नात्मा न सात्म्यं न पानाशनभक्ष्यलेह्योपयोगा गर्भं जनयन्ति । न च परलोकादेत्य गर्भं सत्त्वसंज्ञकमवक्रामति । यदि हि मातापितरौ गर्भं जनयेतां भूयस्यश्च स्त्रियः पुमांसश्च भूयांसः पुत्रकामाः, ते सर्व्वे पुत्रजन्माभिमन्धाय मैथुनधर्म्ममापद्यमानाः पुत्रानेव जनयेयुर्दुहितुर्व्वा दुहितृकामाः । न च काश्चित् स्त्रियः केचिद्वा पुरुषा निरपत्याः स्युरपत्यकामाश्च परिदेवेरन् । न चात्मात्मानं जनयति । यदि ह्यात्मात्मानं जनयेज्जातो वा जनयेदात्मानमजातो वा जनयति । तच्चोभयथाप्ययुक्तम् । न हि जातो जनयति सत्वान् न चैव वाजातो जनयेत् सत्त्वात् तस्मादुभयथाप्यनुपपत्तिस्तिष्ठतु । अथ तावदेतद्यदयमात्मानं शक्तो जनयितुं स्यात् न त्वेनमिष्टास्येव कथं योनिषु जनयेद्वशिनमप्रतिहतगतिं कामरूपिणं तेजोबलजववर्णसत्त्वसंहननसमुदितमजरमरुजममरमेवं विधंह्यात्मात्मानमिच्छन् नित्यतो वा भूयः ॥ ५ ॥ असात्म्यजश्चायं गर्भो यदि हि सात्म्यजः स्यात् तर्हि सात्म्यसेविनामेवैकान्तेन व्यक्तं प्रजा स्यात् । असात्म्यसेविनश्च निखिलेनानपत्याः स्युस्तच्चोभयमुभयत्रैव दृश्यते ॥ ६ ॥ अरसजश्चायं गर्भो यदि हि

रसजः स्यात् केचित् स्त्रीपुरुषेष्वभिरपत्याः सुगर्भं हि कश्चिदस्तीपां यो रसाशोपयुक्तः । श्रेष्ठरसोपयोगिनां चेष्टमां जायन्ते इत्यतोऽभिप्रतमित्येवं मति । आजीरभमार्गमायूरगोक्षीरदधिघृतमधुलसैन्धवेक्षुरसकुष्ठाद्यभिप्रतानामेवएकान्तेन प्रज स्यात् । श्यामाकवरकोद्दालककोरदूषककन्दमूलभक्षाय निखिलेनानपत्याः सुरसत्वोभयमुभयमेव दृश्यते ॥ ७ ॥ न खल्वपि परलोकादेत्य सत्त्वं गर्भमवक्रामति । यदित्येनमवक्रामेन्नास्य किञ्चिदेव पौर्वदैहिकं स्यादविदितमश्रुतमदृष्टं वा । स च किञ्चिदपि न स्मरति तस्माद्दैतद्ब्रूमहे इति । अमातृजयायं गर्भः पितृजयानात्मजयासाध्याजयारसजश्च न चास्ति सत्त्वमौपपादिकमिति-क्षीरपाणि भरद्वाजः ॥ ८ ॥ नेति भगवानात्रेयः । सर्वेभ्य एभ्यो भावेभ्यः समुदितेभ्यो गर्भोऽभिनिर्वर्तते । मातृजयायं गर्भ न हि मातुर्विना गर्भोपपत्तिः स्यात् न जन्म जरायुजानाम् । यानि खल्वस्य गर्भस्य मातृजानि यानि चास्य मातृतः सम्भवन्ति तान्यनुव्याख्यास्यामः । तद्यथा ;—त्वक् च शोणितञ्च मांसञ्च मेदश्च नाभिश्च हृदयञ्च क्लोम च यकृच्च प्लीहा च वृक्कौ च बस्तिश्च पुरीषाधानाञ्चामाशयश्च पक्वाशयश्चोत्तरगुदञ्चाधरगुदञ्च च द्रान्त्रञ्च वपा च वपावहनञ्चेति मातृजानि ॥ ९ ॥ पितृजयायं गर्भो नहि पितुर्ऋते गर्भोत्पत्तिः स्यान्न च जन्म जरायुजानाम् । यानि खल्वस्य गर्भस्य पितृजानि यानि चास्य पितृतः सम्भवतः सम्भवन्ति तान्यनुव्याख्यास्यामः । तद्यथा ;—केशश्मश्रुनखलोमदन्तास्थिशिरास्नायुधमन्यः शुक्रमिति पितृजानि ॥ १० ॥ आत्मजयायं गर्भात्मा ह्यन्तरात्मा यस्तमेनं इत्याचक्षते ।

Charaka Samhita.

Health and Hygiene

WOMEN APPROACHING MIDDLE AGE

Some Health Problems

(By Alice F. Maxwell, M. D. San Francisco.)

Many women would live to enjoy the Scriptural three score and ten years if, in the decade between 40 and 50, they would observe certain rules of life. Every woman approaching forty, at which time childbearing usually ceases, owes it to herself and family to have a thorough and complete physical examination so that a definite estimate of functional or organic changes can be made and the necessary reconstructive measures can be taken. If the law of ratio of adolescence and duration of life holds true, and if the elephant, who matures at forty, lives to the age of 200 years, the dog maturing at two years lives to the age of ten, then man, who matures at twenty, should live to the age of 100 years.

DIABETES IN ADULT LIFE

Diabetes in adult life runs a chronic course and is largely preventable. Its onset is usually insidious and, unless it is discovered accidentally in the course of an examination for life insurance, it usually reaches a chronic or incurable stage before causing symptoms which arouse the

individual's suspicion. Diabetes is a disease resulting from an exhaustion or deficiency of insulin, the internal secretion of the pancreas. Many persons have inferred that diabetes is a disease of the kidneys because of the presence of sugar in the urine, whereas it is actually a disease of the pancreas, although in later stages real kidney damage and serious blood vessel changes may occur. It follows: if people consume starches and sugar in excess, and particularly if they do not exercise sufficiently to use the excess above the storage capacity of the liver, an abnormally high blood sugar will result which will put an excessive strain upon the pancreas and gradually lead to a depletion of insulin. Occasionally the pancreas of persons in middle life may fail under the strain of a normal intake of starch and sugars. At other times, pancreatic deficiency results from infectious liver diseases etc. and by examinations the diagnosis can be made earlier and the progress of the disease checked.

Diet regulation based upon the storage capacity of the liver and the insulin strength of the pancreas can be determined readily by a simple laboratory measure known as the sugar tolerance test.

Persons who have had diabetes in the family, or those who are especially fond of sugars and usually overweight should have this test performed at definite intervals. If the sugar tolerance test shows any sign of pancreatic deficiency, diet regulation and at times insulin therapy will control the disease. Were the value of this examination generally appreciated, the number of cases of diabetes would be tremendously reduced and many more persons would enjoy a healthy middle age.

HIGH BLOOD PRESSURE

High blood pressure *per se* is not so serious in itself as are its attendant disorders which sooner or later are disastrous It frequently leads to heart disease of middle life, which is merely an expression of an exhausted state of the heart muscle brought about by the excessive work of this organ, which is necessary to maintain the circulation in the presence of the increased pressure.

High blood pressure usually develops slowly as the result of chronic constitutional infections or chronic intemperances. Most constitutional infections of the chronic type can be avoided or, if incurred, can be eradicated or controlled. Diseased teeth, tonsils, sinuses, gall bladders and appendices in general furnish the list of structures frequently at fault and medical examinations will offer a way to escape the ultimate penalty of these deranged organs. In most cases, if the condition is recognized early, serious and permanent injury to the general body mechanism, including the blood pressure apparatus may be avoided. Temperance in living habits for one individual may be excesses for another—however, if one avoids, eradicates or controls chornic constitutional toxemias,

practises a wise adjustment of life habits to his or her individual equation one should pass through the period of middle life with the heart, blood vessels and kidneys approximating the normal. It has long been recognized that a person is as old as his arteries. As the capillary resistance becomes greater with the aging of the vital organs and as the elasticity of the blood vessels diminishes, the daily load placed upon the heart should be lightened by less prolonged and violent physical and mental exertion, and by a gradual moderation of the amount and complexity of the food and drink intake. Moderation and watchfulness, therefore, are the guardians of a healthful middle age.

CANCER—WOMAN'S SPECIAL PROBLEM

Cancer is a woman's special problem, striking at many thousands of women, in all stations of life, in their active and productive years. The prevalence of cancer among women is due to the greater susceptibility of women's body to cancer during and after the childbearing period, and especially that part of the body concerned with reproduction. It is well-known that men are particularly susceptible to cancer of the tongue, lip and throat, probably from the irritating effects of smoking; cancer of the stomach and other parts of the intestinal tract occurs with about equal frequency in both sexes. Cancer of the breast and pelvic organs in women, however, is so frequent as to make this dread disease the scourge of middle life. Education should imply the ability to face these facts, facts of sex susceptibility, personal tendency, as well as pleasanter facts in which prevention and cure are the desired end results. Education will demonstrate and emphasize the truth that "no individual is immune from cancer" but that certain types of cancer are almost entirely preventable or curable and that other types of cancer must be recognized early and treated, if lives are to be saved.

In connection with cancer of the breast, Dr. Bloodgood, an authority on these tumors, states that 75 per cent of women with lumps in the breast do not have cancer, and if the lump does prove to be cancer, more than 70 per cent. can be cured if early attention is given to the growth. Nature warns women in time but they need special instruction to "act in time." Nor is a tumor in the breast the only evidence of trouble; discharge from, or irritation of the nipple, hardness and fullness of the breast, the development of a dimple in the skin of the breast, or reddened skin areas must be carefully scrutinized.

Women can save lives by an openminded, intelligent and courageous attitude toward the cancer problem. This can be accomplished by co-operation with a competent medical attendant and by dispelling the fog of sentimentality and ignorance which is so often responsible for fatal delays.

CHANGE OF LIFE SHROUDED BY DREAD

A period often shrouded by much misconseption and dread is the menopause. The physiologic menopause, or "change of life," is a slow involutional process extending over several months or even years. The most striking manifestations of this period is the cessation of menstruation, which may cease abruptly, or more commonly gradually diminishes in frequency and amount An increase in the amount or frequency of the hemorrhage must not be regarded as a natural consequence of the menopause but rather demands medical advice.

There are many popular superstitions in regard to the physical and spiritual alterations which women undergo at this period. One prevalent belief is that cessation of menstruation (either natural or postoperative) is followed by the acquisition of masculine characteristics (deepening of the voice, sprouting of a beard and alterations in the disposition of fat). Many women, of course physical make-up, do show the above changes after a natural or surgical menopause but such alterations are due not so much to cessation of menstruation and loss of ovarian secretion as to childbearing, racial and hereditary traits, disease, lack of exercise and gross self-indulgence. Women of innate physical refinement often show greater delicacy of features after the menopause and acquire an attractiveness they never before possessed. Indeed, after an artificial menopause, many women who have long suffered from pelvic disease may appear rejuvenated, indicating that the aging effect of disease is more significant than the loss of ovarian secretion —*Better Health.*

THE SCOURGE OF TUBERCULOSIS

Its Causes And Cure

(Dr. Jadu Gopal Mukherjee.).

Not in the days of yore but in the days of our childhood I remember the references used to be made amongst the elders to Phthisis having had occurred in such and such family. It was very few and far between when one could actually come across a real consumptive. Centering round such an unfortunate case, stories were spun, sobs and sighs were exchanged and theories were advanced. I distinctly recall having heard people say there were two classes of diseases—"Papajas" and "Karmajas". Papajas were the fruits of our short-comings of this life aud they could be got over by Prayaschitta or atonement But the other variety depended entirely on the law of Karma. There is an undertone of Karma in the song of life, and it is beyond human power to withstand its effect. Another classification was also offered. The "Susaddha, Kastasaddha, and Asaddha"—the easily curable, curable with difficultly and the incurable

class of diseases. Under the last were included the tuberculosis, leprosy, tetanus and Asthma. I listened to the talks with all attention as I listened to the legend of ages. I did not know then that a day would come when I would be a medical student and find out that our elders were not far wrong in holding the view then held. I am awefully sorry the chit chats that often grew around the lamentable lot of miserable young widow and that made a tremendous impression on my mind during my school-boy time are the facts revealed in Ayurveda a few thousand years ago and still remain as powerful as ever. The progress of human intellect has a glorious history behind it. But the incurable diseases yet mainly remain the incurable ones. It is a standing slur on our forward movement. The curse has got to be blotted out. And this means a team work of research along organotherapy and bio-chemistry, Bacteriology and chemotherapy. The treatment we offer to the suffering public has not made much head-way. Twenty-five years ago we would recommend fresh air, sunshine, good food and regulated rest and exercise. Up till to-day we have not have nothing better to hold out.

WORKING HAVOC

While this is the condition of our medical aid, the disease is making rapid strides and working havoc in the society. The effect of the last pandemic—the influenza during the war—is simply horrible. It has prepared the soil for infection by tubercle germs. The increasing poverty of our people together with the bad legacies of diseases like Malaria, Kalaazar, Influenza etc. undermining our stamina forms the most important predisposing group of causes of tuberculosis. Regard being had to the ever-enlarging incidence of lung tuberculosis in our country, one often looks aghast at the mighty race between Malaria and cosumption. It appears as if Phthisis were going to oust and occupy the place of the commonest fever, malaria, in the hierarchy of diseases of Bengal. With what impotence do the medical profession and the lay public look at the dangerous game going on before us.

I admit a great step forward has been taken in lung surgery. But that is some consolation to the advaned cases of Phthisis. For the great majority of cases the diagnosis means the pronouncement of death sentence. Can nothing substantially good be done for them ? I stood confronted with this problem much as many others have stood and still stand to-day. I became interested in this subject because the malady gave me a very very rude shock. I have lost some of my best friends, stars of youngmen, jewels of a nation who could be objects of rightful pride in any country of the world. All cares, nursing, treatment tempered with the glow of love and affection were of no avail. In spite of all our efforts they have gone to glory.

IS IT CURABLE?

Now then, I come to the consensus of opinion of the present-day experts They hold tuberculosis is both curable and incurable a disease. It is curable in its early stage. It is incurable in its advanced condition. What constitues this early stage and how to fix it up? One is sure of the diagnosis when one finds tubercle bacillus in the sputum. In most cases, it happens so, not before the disease has made some progress. The doctors call it the stage of signs. The real early stage is the stage of symptoms, *i.e.*, the stage when doctor's instruments cannot find any definite area of lung diseases, yet the patient has the following:

(1) Progressive loss of strength without a definite cause,

(2) Progressive loss of weight without a definite cause, and

(3) Interminable, prolonged fever.

To these may be added—

(4) History of haemoptysis or blood spitting. If such a patient has the history of a previous attack of pneumonia, influenza or particularly pleurisy, well, he comes under a reasonable suspicion of early tuberculosis. Heredity is now dislodged from its previous position as a contributing factor. Yet it is not totally discarded. The French savants Calmette, Negri and others are again giving support to it.

EARLY STAGE

The early stage, as adumberated, is a condition of toxaemia—poison circulating in the blood. The low blood pressure and heightened pulse rate also indicate it. I began to ponder that under such circumstances the blood cells must have to be functioning under a special strain. Therefore they must show some change in their relative constituents. I had an opportunity to take up the work in 1924 and have continued it since then. As luck would have it, I found, in 1925-26, there was some change in the relatve position of the white blood corpuscles. There was relative increase in the large mono-nuclears with similar decrease in the small mono-nuclear cells. In nearly 95 per cent. of cases, this change can be demonstrated in the blood. I am now studying its limitations.

But the diagnosis, though it is of paramount importance in the early stage, in this case is of no such interest to the patient or his friends and relatives as is the need of cure. And we hold but one cure at present for the incipient consumptives. That is sanitarium treatment. Two kinds of sanitaria are recommended—the sea-side places and the hill stations. Some cases fare badly on the sea-shore because the micaceous, gritty particles in the air irritate the lungs and the vagaries of atmospheric pressures tend to produce haemoptysis.

People having a large purse can go to the distantly placed Himalayan sanitaria at Dharampur, Bhawali or Almora, or they take a sea voyage to European health resorts particularly those in Switzerland. But something

must be done for the people of moderate means. Ranchi is a place where many health seekers stealthily come. Stealthily, because no house owner would knowingly let out his house to a T. B. case, as the consumptivas are popularly called here. Very recently, a sanitarium has been opened at Itki about 19 miles from Ranchi. It is a product of official and missionary combined efforts. Unfortunately, the institution is provincialised. Rai Bahadur Dr. Chuni Lal Bose made his emphatic protests through the press against such a practice of such a humanitarian institution But it is no use quarreling over spilt milk. Why can't non-official efforts bring about another such sanitarium here? For the thoughtful public the philanthropically disposed and the moneyed men I jot out a short, unassuming scheme for consideration. I hope I have not shut my eyes to the practical aspect of the question.

SANITARIUM

For diagnosis, treatment and isolation of the consumptives.

Departments—

(1) Hospital (General wards and cottages).
(2) X-ray.
(3) Clinical Laboratory.
(4) Dispensary.

Cases Admissible—

(1) Patients with arrested diseases and on the way to recovery.
(2) Closed and early cases.

Because only in these cases something can be done. Early diagnosis by differential blood count and X-ray etc. is likely to save 65 per cent. of cases.

(3) Selected frank cases may be taken in a separate block.

Some Details—

(1) Hospital with general wards and cottages.
Accommodation to start with say, for 20 patients.
Ward accommodation for 10 cottages for 10 cases.
The site may comprise of 15 to 20 bighas of land.
The valuation may be on average Rs. 500 a bigha.

The staff should consist of :—

(1) One medical officer.
(2) Two nurses or compounders.
(3) One mechanic.
(4) Sweepers and menial hands.

Approximate cost (monthly) :—

	Rs.
Food	500
Medical officer	500
Two Nurses or compounders	140
Menials etc.	60
Contingency	15
Medicine etc.	50
House physician	100
Clerk and Cashier	80
Mess Manager	50
	1495

Source of income—

To meet the recurring expenditure, so long as better financial position does not prevail, all the seats be converted into cottage cases. Each case may be required to pay a rent for the cottage, other charges being extra.

For additional income, the X-ray may be thrown open to general public for therapeutic purposes, X-ray and electric.

Training classes may be opened for medical students on special fees. Several courses of instruction may be arranged during the opportune seasons.

Initial expenditure—

Cost of building.

10 cottages (Each cottage shall have one room for the patient, one for the relatives or attendants, one kitchen, one store room and a privy)	Rs	20,000
Staff quarter, doctors' quarter, Laboratory etc. ...	,,	40,000
Value of land (20 bighas)	,,	10,000
X-day apparatus and laboratory outfits	,,	10,000
Total	Rs.	80,000

If a profit is sought to be made and provisions are made for repairs, refills, etc. the charges of the cottages can be enhanced to Rs. 80—100.

Tuberculosis being on the increase and people having nothing to fall back upon but the sanitarium line of treatment, a steady bee line is expected of the swarms of patients,

As they have done in the Himalayan sanitaria the seats may be classified under the following heads.

1st class :—A cottage with 2 rooms with attached baths, a kitchen outside. The rent shall be Rs. 80 a month.

2nd class :—A cottage with 2 rooms, one bath room and kitchen : rent Rs. 50 a month.

3rd class :—Single room, one bath room and kitchen : rent Rs. 15 a month.

Each patient is to pay Rs. 5 for the servant ; Rs. 10 on average, for medicine. Dhobi and Barber may be arranged with. Dairy arrangement may be made by giving contract to Goalas. For instance, the institution will charge anna one more than the cost price per seer. This is done elsewhere.

Now then, if we have 6 1st class, 7 2nd class, 7 3rd class seat, our income shall be as per below :—

1st class	Rs.	480
2nd class	Rs.	350
3rd class	Rs.	105
For servants	Rs.	100
For Medicine	Rs.	200
For Fooding	Rs.	900
	Total Rs.	2135

A guest house and attendants (*i.e.* attendants' of the patients) quarters may be erected. Chargeable for halts. Messing extra.

Menu—

Morning meal.—Milk ¾ lb. Eggs 2 (raw), Bread 2 pieces, Butter 1 chittack.

Mid-day meal.—2 pieces of chapati, Rice, Dal, Vegetable curry—1 variety.

Afternoon—¾ lb. milk.

Night.—Chapaties, Vegitable curry—1 variety. Meat ½ powa. For vegetarians—Sujee in milk.

This is actually supplied in a 1st class Sanitarium.

Contracts may be made for Dhobie and Barber.

Dhobi—Each article—1 anna.

Barbar—Each shave—2 annas.

REARING UP HEALTHY CHILDREN

The Problem Of Feeding Them

According to Dr. Pritchard, Physician of Queen's Hospital, London, this period inculdes the important stage of weaning from a milk diet, breast or bottle, to one that is mixed and partly solid.

He says :—

At or about the ninth month the infant usually reaches a stage at which, owing to the eruption of the teeth, a certain amount of solid food is indicated There are, however, no valid reasons why this change should be allowed to interfere with the observance of general principles of physiological feeding with respect to quantity, balance, etc., which presumably have been heretofore observed.

There is a very widely held belief that it is bad both for the mother and the baby that breast-feeding should be continued after the eighth or ninth month. I submit that it is better for the baby to continue with the breast-witheld.

An average infant, eight months old, requires food of the value of about 700 calories ; that is to say, his boby weight (about 17 lbs.) multiplied by the factor 47.

Now, it is quite easy to introduce new articles of diet, such as rusks, crusts, potato, butter, cream, baked apple, broth, gravy, and anything that may be thought suitable without disturbing quantity or balance, if the total quantity of breast-milk supplied to the baby by the mother is estimated by the "test feed", that is to say, by weighing the infant in accurate scales before and after feeding.

Let us suppose for instance, that the baby in question obtains 25 oz. of breast-mrlk in the course of the day, leaving a deficit of 14 oz. to be made good by supplementary feeding. Now 14 oz. of cows' milk modified to breast-standard can be prepared in the following manner. Take :—

Cow's milk	...	7 oz.
Sugar	...	6 drachms.
Fat (cream 1 oz.)	...	3 drachms.
Water to make a total of	...	14 oz.

Now, instead of the sugar required for the preparation of this standard mixture, any required proportion of it, or the whole, can be replaced weight for weight, by any desired variety of insolube carbo-hydrate or farinaceous food, without interfering with the "balance" of the diet as a whole, and the same is true of the fat ; any variety of fat can be employed

in place of the cream usually made use of in preparing modified milk; for instance, butter can be used, or dripping, or becon fat, weight for weight.

8 MONTHS' OLD BABY'S DIET

In order to observe correctness in quantity and balance, the diet of our eight months' old baby can consist of :—

Breast-milk	...	25 oz.
Cow's milk	...	7 oz.
Carbohydrate, in any form	...	6 drachms
Fat in any from	...	3 drachms

Now, with such data it is very easy to arrange a suitable and varied diet for a baby passing through the difficult period of transition from a milk to mixed diet. The meals may be arranged to suit the convenience of the household, but they should not be more than five in twenty four.

A convenient arrangement for the 24 hours might be as follows :—

6 a m —Breast-milk 9 oz. followed by rusk 1 drachm.

9·30 a.m.—Cow's milk 3½ oz, cream 2 drachm, sugar 1 drachm, rusk 1 drachm, and butter ½ drachm.

1 p.m.—Breast-milk 8 oz., followed by rusk and apple jelly.

9 p.m.—Breast-milk 8 oz.

In the case of bottle-fed babies the same arrangements hold good, except that instead of breast-milk, an equivalent quantity of cow's milk modified to breast standard must be substituted.

In the case of botule-fed babies, the chief mistake, that is made, is to supply too much cow's milk and far too little carbohydrate and fat. No child under two years of age can take more than one pint of cow's milk in 24 hours without a disturbance of the protein-fat-carbohy-drate ratio.

As the child grows older, the total quantitative requirements become greater, but the "balance" should remain the same, with the exception that rather less fat required, and rather more carbohyrate. These changes are very easily effected if the general scheme, as above indicated, is observed New varieties of vegetable, farinaceous and nitrogenous food should be introduced form time to time for the sake of change and to promote the digestive education of the child.

CHILD MORTALITY

Prevention of Disease in early Life

(By H. E. Thelander, M. D.)

Periodic examinations of healthy children for the detection of minor defects and bad tendencies at a period when correction is fairly simple are essential for their future welfare. Even the healthiest child, however, will contract diseases, and it is because the illness of early life may play a part

in the future health of the individual that the care of the sick child is of extreme importance. In a few diseases such as diphtheria, appendicitis, meningitis, and some others, treatment to-day instead of to-morrow may mean the difference between life and death. Parents cannot differentiate the early symptoms of these diseases from the minor illnesses. The only means of reducing the number of fatalities from them is to have a physician see and take the responsibility of every illness. Nor should responsibility end with diagnosis and treatment. Of equal importance is the proper convalescence after illness Sickness, even in its mildest form, is a shock to the young body. It may take several days of normal temperature and absence of symptoms to repair the damage done. If, during this time, the child is permitted full activity, convalescence may be unduly prolonged and result in chronic poor appetite, failure to gain, fatigue and repeated infections.

With our present standards of health and our knowledge of prevention of disease, morbidity and mortality among our children should be reduced. The most effective way of doing this is: (1) Keep the child under close medical supervision to detect the onset of defects and bad tendencies in order that these may be corrected before they have become permanent. (2) Give the sick child the benefit of early diagnosis, prompt treatment and a proper convalescence (3) Immunize children against smallpox and diphtheria early and thus eliminate these diseases from our midst, and use what available means we have to lessen the severity and protect the very young child against the other contagious diseases —*Better Health*

HOW THE ANCIENTS TRAINED

Old Time Contests

A curious notion existed among the ancients that standing erect was in some way an exercise. To stand before food was said to be good for asthmatics, standing after dinner was the cure for indigestion. It is related that for biliousness leg circling movements were used, so the Greeks evidently studied curative P. C. as well as developing their bodies even in these days. Rope climbing was practised also, whilst men walked and danced on the tight rope with a balancing pole, as it is done at the present time. Facts of this kind have been discovered by means of the figures sculptured on certain antique gems.

LUNGS EXERCISE

The ancients also had interesting views regarding the lungs. An exercise for weak lungs was reading aloud. It affords capital exercise to the thorax and muscular structures of the vocal cords, improving also the condition of the lungs. The wonder is that it is so much neglected at the present time. Were it more attended to, we should rarely hear of pneumonia following an undue or prolonged exercise of the voice, as it often does in delicate-chested individuals.

Galen tells of a celebrated Thessalian in the age of Nero, who styled himself the physician-conqueror, affirming that he could cure malignant ulcers by voice exercises. From this, it is inferred that if he improved by its means the vital organs of his patients, this would favourably affect the condition of the ulcers.

In conclusion, we may say that the present day physical culturist owes, no doubt, to the first pioneers of P. C. The famous statues throughout the world still stand as examples of their high ideals, and although the Greeks lacked details in art, their figures are sufficient proof that they trained their bodies to perfection.

The Apollo type stands for perfect proportion, and the measurements have often been taken as being the nearest to a perfect man whilst Milo was an emblem of power. It is claimed that Milo could carry a full grown bull on his shoulders, and his method of doing this has for all time been typical of progressive strength. He commenced carrying a calf on his back, and each day as the animal grew, Milo did his daily performance, until he carried the beast fully grown. Whether this is correct or not, we never shall know, but it is an example of progressive training.

Achilles was the speed merchant, the emblem of runner. We have all heard of the Marathon races over a distance of approximately 25 miles. Dirt track racing may be new on motor-cycles, but the old-time chariot racers would require to be as bodily fit as our present day riders. We have seen Greek and Roman athlets portrayed on the films and it has always been a struggle for the producers to find men of suitable physique to represent the old-timers.

The ancients had no mean idea about beauty of the female figure. To what extent these "belles" went to develop their outline of form I cannot tell you, but they would no doubt have their own methods to take the place of the present-time games favoured by the fair sex, otherwise they could not have produced the statues which are still exhibited and still known to-day as being the ideal figures for comparison. —"*Health and Strength.*"

Reviews and Notices of Books

—:o:—

Obstetrics for Nurses.—By Charles B. Reed, M. D., F. A. C. S., Professor of Obstetrics, North-Western University Medical School, Chief Obstetrician, Wesley Memorial Hospital, Chicago, and Charlotte L. Gregory, R. N., B. S., M. D., Adjunct in Obstetrics at Wesley Memorial Hospital; Clinical Assistant to Obstetrics at Northwestern University Medical School, Chicago. One hundred forty-four Illustrations including two Coloured Plates. Third Edition. St. Louis. The C. V. Mosby Company 1930.

This is the third edition of Reeds' *Obstetrics for Nurses*. Dr. Reed was ably assisted in the preparation of this edition by Dr. C L. Gregory physician and Nurse. By this happy combination, this book for Nurses represent the authoritative opinions of a Professor who is actually engaged in teaching the subject and of a Nurse and Physician, whose experience in practical nursing is well-known. Doctor Gregory has brought to her task of helping service in this book the view point and intuition of the nurse. This, combined with Doctor Reed's skill as a teacher and Obstetrician, has brought forth a book that will meet the need of teachers and students alike.

The information is full and concise. All debatable questions have been avoided A nurse is expected now-a-days not only to be a capable and intelligent assistant to a doctor with whom she must co-operate, but also should undertake the responsibility of giving counsel to the patient under her charge in emergencies.

The book is ideal in size and arrangement. The authors have presented the subject matter with literary charm and skill. The language is simple and it is not likely to bewilder a nurse in the study of Obstetrics. The book is admirably suited for class instructions and is also complete enough for post-graduate reference.

The Care of Children in the Tropics for Health and Disease.—A Practical guide for Mothers, Nurses, and Junior Practioners of Medicine By Eric C. Sphar, B.A., M.D., B.S (Lond.), M.R.C P., Fellow of the Royal Society of Medicine, Physician, General Hospital, Colombo; Late Physician, Children's Fever Hospital, Hampstead, London; Clinical Assistant, Great Ormond Street Hospital for Sick Children, London; and Lecturer on Diseases of Children at the Ceylon Medical College. 8¼ × 5½ inches. Page xiv. and 265, Plate 1. Price 7/6 net, Bailliere, Tyndal & Cox London, 1930.

This describes in detail the correct principles of child's upbringing, feeding in infancy, its common errors, their detection and their remedies. The subject is presented to us so fully and explicitly that it is pleasing to note that the present volume will be welcome to all students and teachers. The author has tried his best to bring the book thoroughly up to date and the most recent advances in treatment have been included.

The use of dried milk products in infant feeding which is largely replacing the natural cow's milk in the Tropics is fully explained and its defects pointed out, and the superiority of mother's milk over that of any and every kind of bottle feeding is established beyond doubt. The common ailments of the child are fully dealt with. The common household remedies and their uses are described and some useful prescriptions and many nursing recipes have been added at the end of the book.

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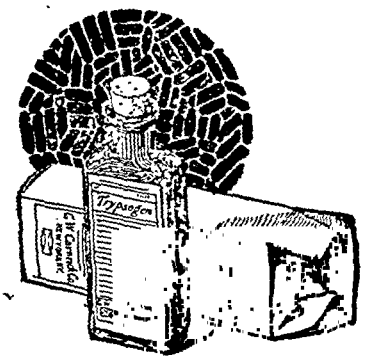

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or the Hindu System of Medicine.

Vol. VI.] May, 1930. [No. 11.

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THE JOURNAL OF AYURVEDA

Vol. VI.] May, 1930. [No. 11.

Sarda Marriage Act.

The much talked-of and much criticised, in the Press and pulpit, Sarda Bill has been passed both by the Assembly and the Council of State. His Excellency, the Viceroy, has also given his consent to it and the bill has been enacted as Law which came in force on and from April 1930.

Whatever might be the object for enacting the bill, we are only concerned with its medical and social aspects. We do not possess any information that might illuminate the motive of Mr. Sarda to introduce such a bill at all, nor could we understand why our educated and intelligent leaders could agree to the passing of such a curiously drafted and self-contradicting bill. It is also beyond our surmise why the Government did overlook so many defects and loop-holes in the bill which are sure to defeat the object of the bill in 99 per cent. of cases. To illustrate our points, let us discuss some portions of the bill and the incongruity of the whole affair will come to light.

The minimum age of marriage for a girl has been fixed at 14 years while that of consent at 15 years. Now the new law allows a man attaining majority to marry a girl of 14 years of age, but it prevents consummation before the age of 15 of the girl. In order to prevent consummation, the Act provides for punishment but the whole act does not provide any means of detection which simply rests with an informer.

The obvious result will be that either no informer will be available due to the clause asking him to deposit a certain amount of money when informing or that wrong information might be supplied to the authorities when no money is asked for deposit, just to feed fat some grudge against the party complained of, and thus the end of the legislation would be defeated. Besides, medical examination of girls in the moffusil is rather very difficult if not altogether impossible, so that these will entail the authorities to unnecessary trouble and expenditure. Besides its tantalising effect on the society, it will be a source of intercommunal strife.

Now to the medical aspect of the problem. It is the general natural law in the tropics that girls menstruate at the age of from 13 to 14. Well-fed and healthy girls are sometimes seen to menstruate even earlier. It is also sometimes found that the hymen ruptures with the onset of the first mensus without requiring co-habitation. Medical opinion also goes to show that "the younger the mother, the bigger the child." It is also a bitter truth that mortality rate among primepera women is much more in aged girls than the younger. It is also a fact that first labour is always more painful and dangerous in aged mothers. The reason is that the bones in the pelvic region is harder and less pliant in grown-up girls. It is also a fact that first-born children are generally more healthy and more intelligent, of course on the assumption that parents of such children were healthy at the time of conception and the mother healthy during the period of gestation.

Apart form science, we see in actual life many healthy children in the country as also in cities, born of mothers aged between 12 and 14, and the mothers of such children, too, none the less wo.se of for it. On the other hand, primeperas at 18 or more are not rare who are worse off regarding health after the first issue. We have also seen mothers of many children commencing

motherhood at a very early age, say 12 or 13, grow more beautiful, healthy and robust with each confinement, contrasted with mothers of one or two children begetting them as late as at 20 or 22 keeping very indifferent health as they grow in age.

Although there is the other side of the shield where beastliness might be enacted on too young a wife and a few deaths might have been recorded in connection with such cases, yet from actual findings, it is preposterous to do away with marriages of girls below 14 and to prohibit conjugal rights before 15 by legislation.

Unlike in cold countries, girls in our country mature earlier and require association of man by the universal law of nature. According to science of all ages and climes, girls become fit for motherhood after the onset of menstruation and by nature develop a craving for same from that period. Scientifically, as also morally, it is a crime to suppress their natural craving.

We donot, of course, advocate child marriage inspite of the whole host of arguments in its favour from social and household point of view. In our opinion, the best course, according to the present condition obtained in our country, would have been to marry girls at the age of 12 *i.e.*, just before the onset of menstruation and keep the girl with their parents for one year as was the custom with the old Hindu Society.

Besides, in our opinion the cause of deterioation of our national health, child mortality and maternal mortality is not due to child-marriage or girl motherhood. The real cause is our economical death. 90 per cent. of the population of this vast peninsula is half starved majority of whom even do not know what is meant by two meals a day, not to speak of scientific full meals. It is therefore quite criminal to expect a healthy and robust child of such parents. It is one of the wonders of the world that some of our children still survive at all. It is this economic distress that tells directly upon the health and

longevity of the mother and indirectly upon those of the new-born babes.

We hold and believe strongly that no increment in the age of marrying couples will solve the child and maternal mortality problem of India, nor will it solve the question of improving the national health. It is food and food alone that can solve these problems. Give sufficient food to the parents and the infants born and you will see the country full of bright and healthy children with cheerful parents. Without food, only increasing the age of marriage will be of no avail.

We are glad to see that the Government proposes to amend the act as to the age of the couple where necessary and we are one with them in this move, as it will go a great way in doing away with many slips and pitfalls that are a natural corollary to the increase in the age of marriage.

It is still our opinion that legislation on such social affairs is bad in principle and we are glad that the act, as amended, will be simply a dead letter in the Statute book.

H. N. C.

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THE NERVOUS SYSTEM OF THE ANCIENT HINDUS

BY

ASHUTOSH ROY, L.M.S., (Hazaribagh)

(Continued from our last issue)

—:o:—

Svadhisthan Chakra—6 petals, as follows :—

Two branches form Pelvic plexus
Two communicate above with Aortic plexus
Two communicate with Lumber ganglia of the sympathetic.

Manipur Chakra has got 10 petals, as follows :—

(1) To phrenic or diaphragonatic plexus.
(2) To supra-renal plexus
(3) To renal plexus
(4) To spermatic plexus
(5) To coeliac plexus which divides into five plexuses as follows :—
(6) To gastric plexus
(7) To splenic plexus
(8) To hepatic plexus
(9) To superior messenteric plexus.
(10) To Aortic plexus.

Anahata Chakra has got 11 petals as follows :

It is formed by—

(1) The left superior cardiac nerve.
(2) The inferior cervical cardiac branch of vagus.
(3) Receives filament from the deep cardiac plexus which gives 8 branches.
(4) Forms the chief part of the anterior coronary plexus and sends filaments to the anterior pulmonary plexuses.

NOTE—The 8 branches of the deep cardiac plexus are as follows :

It is formed by 3 cardiac nerves (Right superior cardiac, the middle and the inferior cardiac) from the three cervical ganglias of the sympathetic ; also by

Cardiac branches from the recurrent pharyngeal and the vagus nerves.

It distributes branches to anterior pulmonary plexus, posterior pulmonary plexus and coronary plexus, and gives filaments as already noted to the superficial cardiac plexus.

"*Vishuddha*" has got 16 petals as follows :—

It divides into carotid and cavernous plexus ;
The carotid gives 4 branches ;
The cavernous 12 branches.

Carotid plexus gives 4 branches communicating with—

(1) Basserian ganglia
(2) 6th cranial nerve
(3) Meckel's ganglia.
(4) Jacobson's nerve.

Cavernous plexus gives 12 nerves as follows :

(*a*) Branches communitating with—

(1) 3rd cranial nerve
(2) 4th cranial nerve
(3) Ophthalmic division of 5th cranial nerve
(4) 6th cranial nerve.

(*b*) Branches of distribution or terminal filaments are :—

(1) To piameter
(2) To orbit
(3) To interior of Eye ball
(4) To ganglia of Ribes.

(*c*) Discending branches :—

(1) Middle cervical ganglia
(2) External branches
(3) Internal branches
(4) Anterior branches.

"*Agna Chakra*" has got 2 petals.

It is formed by 2 lateral gangliated chains—Ida and Pingala.

Detailed anatomy and physiology of the Shata Chakra.

(1) *Muladhar Chakra.*

It consists of two chakras, one superimposed over the other :

(*a*) The Mula Chakra (lit. Root plexus) connected with the sympathetic system corresponds to the Inferior Hypogastric or pelvic plexus, whose force is "Apan Vayu".

(*b*) The Adhar Chakra (lit. Basis plexus) connected with the spinal system corresponds to the sacro-coccygeal plexus, whose force is "Dakini".

The site of the "Muladhar Chakra" is described as opposite the Pereneum, midway between the penis and the anus. The pelvic plexus, says modern anatomy, is situated at the side of the Rectum in the male and between the rectum and the vagina in the female.

The "Mula Chakra" has been described as situated at the centre of the quadrangular "Adhar Chakra."

Near the mouth of the "Bajra" fibers or dry fibres from Filum terminale, which is two fingers breadth from the base of the genitals and in the pericarp of "Adhara Chakra", is a lightning-like triangular ganglia" named the "Tripura Chakra", the force of which is known as "Tripura Shakti" (a part of "Apan Vayu"). Here is the "Rudra Granthi".

In this "Tripura Chakra" (coccygeal ganglia or ganglia Impar) is "Kama-bija" (collateral sex centre). The higher psychic sex centre is situated at the "Kama-kala" Triangle (3rd ventricle of the Brain).

Connected with the "Tripura Chakra" and situated inside is the "Swayambhu Lingam" (conus medullaris, says Rele). It is a triangular pyramid (the seat of the sex centre in the spinal cord with its head downwards having an aperture in the centre of the head.

This aperture marks the termination of the central canal of the spinal cord and is closed by the "Kundalini" coiled like a serpent. This is the lower "Brahma dwara" or the tail end of the spinal cord.

The conus medullaris is the lowest bulbar enlargement of the spinal cord.

The "Kundalini" is identified by Prof. Seal as the coccygeal ganglia.

By meditating on the "Kundalini" over the "Swayambhu Lingam" in the "Tripura Chakra" the "Kama-bija" (sex centre) is excited as in certain Tantrik exercises, the "virjya" (Semen or external secretion of the Testes) is withheld voluntarily, so that increased quantity of "Ojah" (sex hormone, Dixon's glycero-phosphate of lime and other salts) are secreted and absorded and feed and stimulate the nervous system, so that the "Yogi" becomes a king amongst men.

"The latent 'Kundalini Shakti", says Sir John, "is the supreme 'Shakti' (*para-shakti*) in the human body, embodying all powers and assumes all forms. Thus the sexual force is one of such powers and is utilized. Instead of descending into gross seminal fluid, it is conserved as a form of subtle energy (ojah) and rises to "Shiva" in "Sahasrar" (absorbed by the nervous system) along with "Prana" (which is thus different from "Kundalini Shakti"). It is thus made a source of spiritual life instead of a cause of physical death (as a result of seminal waste). With the extinction of the desire of sex-connection, mind is released of its most powerful bond."

(2) *Svadhisthan Chakra.*

The site of the Chakra is described as situated at the root of the genitals and distinct from the "Muladhara." It corresponds to the superior hypogastric plexus situated opposite the promontary of the sacrum. Hindu anatomy believes that the "urinary centre" is located here. Within it, is located the "Jala Chakra" or the sacral plexus of spinal nerves whose force is "Rakini".

Just as the presiding "Devata" (God or force) of "Muladhara" is "Brahma" (creative energy deified in Hindu mythology), so the presiding "Devata" here is "Vishnu" (preserving energy). By removing the intestinal toxins through urination and defæcation, the organism is preserved.

The "Apan Vayu" of Ayurveda is the sympathetic force of both "Muladhara" and "Svadhisthana." The former is concerned with gestation, erection and ejection, the latter with defaecation and urination.

(3) *Manipur.*

It is described as situated at the root of the navel and is identified as the solar plexus. The largest ganglia of the body found associated with it, says modern medicine, is the semilunar ganglia.

In the pericarp of the "Chakra" is located the triangular plexus of fire (Tejas chakra) which corresponds to the Lumbar plexus of spinal nerves.

It is the great katabolic (heat producing) centre of Ayurveda (seat of 'Pitta").

The solar plexus, as its name implies, says Yogi Ram charak (Hatha-yoga), bestows heat and energy to all parts of the body. The presiding "Debata" is "Rudra" (Katabolic or destructive force deified).

Leadbeater says that the various chakras absorb energy from different forms of cosmic force. We absorb energy from the sun through this chakra, from the earth through Muladhara, and from the moon through the "Chandra Mondal" (Lunar plexus) in the brain.

The sun is the ultimate source of all cosmic energy, but when the sun sets and the moon rises, we derive some form of cosmic energy of sun, which passing through the moon is modified. Similarly when at a dark night there is neither sun nor the moon, we derive some other form of cosmic energy of the sun, modified in its passage through the earth. The Solar and Lunar spectrum are different.

If the moon can influence the vast sheet of water in the ocean, is it very hard to believe that our body, which is composed of over 75% of water, is affected by the moon also ?

Again the forms of cosmic energy derived from the earth must differ in presence or absence of the sun.

(4) *Anahata Chakra.*

It is situated in the cardiac region and corresponds to the superficial cardiac plexus. Over the pericarp of this "Chakra", is spread the "Vayu" or air chakra which corresponds to the Thoracic plexus of spinal Nerves.

Below the pericarp of this lotus is a red lotus with 8 petals, which corresponds to the deep cardiac plexus.

Here is the "Vishun granthi", the presiding force of which is "Vishnu" (preserver) deified. By respiration the oxygen is inhaled which katabolizes the body toxins by oxidation and the impurities which are volatile are got rid of, including CO_2 and thus body is preserved and kept healthy.

In the heart are situated the centres of the following forces :—

(*a*) "Vayu-bija" (force of Vayu), the accelerator centre, corresponding to Biedle's ganglia at the junction of Atria and ventricle.

(*b*) "Bana-Linga"—in the middle, controlling the two, corresponding to Von Bizold's ganglia in the inter-atrial septum (middle).

(*c*) "Three-eyed Isha"—the inhibitory centre, corresponding to Remak's ganglia at the junction of Sinus and Atria.

Here is located the Manipitha or jewelled altar where is seated the micro-cosmic individual soul of emotional people.

(5) *Vishuddha Chakra.*

It is situated at the base of the throat and corresponds to the superior cervical gangliated plexus.

Here is also located the "Navo-mandal" (Ether Chakra) corresponding to the cervical plexus of spinal nerves.

Within the pericarp or area of control of this "Chakra" is the "Chandra Mandal" or Basal Ganglia of Brain, with which the superior cervical ganglia is closely connected by its ascending branches.

Associated with Chandra Mandal is "Sada-Shiva", probably the Gasserian Ganglia with its "five faces and ten hands."

The five faces of Gasserian Ganglia are the two nerves of origin which are the roots of the 5th carotid plexus, a division of the superior cervical ganglia, and its three branches, which are—

The ophthalmic branch or division The superior maxillary ,, The Inferior ,, ,,	of the 5th cranial Nerve (Trifaced Nerve.)

The ten hands correspond to the ten Nerves, which issue from these three branches as follows :—

Two ciliary bundles from the first division, four nerves from the second division :—

In the cranium
In the spheno-maxillary fossae
In the infra-orbital canal on the face ;

Four nerves from the third division :—

Recurrent meningeal
Nerve to Internal Plerygoid muscle
Anterior division
Posterior division.

(6) *The Agna Chakra.*

It is situated opposite the space between the two Eye-brows and corresponds to the ganglia of Ribes.

Inside is the Shakti Hakini with six faces and six arms commanding the structures inside the cranium.

Within the lotus resides the subtle mind, in other words the subtle mind is controlled by this "Chakra," which is variously described as the "plexus of command", the "third Eye." The subtle centre of this Chakra is the Pineal gland, the vestigeal remains of the third Eye of some fishes. Here is developed the "sixth sense" of the "Yogis" which make them super men.

Within the "Yoni" (triangle), inside the pericarp of this "Chakra" is situated the "Itara Linga" or the ganglia of Ribes.

Lalana Chakra.

Besides the "Shata-Chakra" described above, we find in some "Yoga" books (not mentioned in Chata Chakra Nirupanam) a small "Chakra" of special importance in Yoga known as the "Lalana Chakra"

It is situated at "Talu-mula" (lit. root of palate) and probably corresponds to the cavernous plexus. The subtle centre of this Chakra is probably the anterior pituitary lobe. This "Chakra" is situated below the "Agna Chakra."

Relation between the cerebro-spinal and sympathetic system.

According to the ancient Hindus, the fourteen nerves described above are all connected with the Sushamna, at some part of its course Thus the cranial nerves are associated with it in its upper or cerebral portion (medulla and pons). The spinal Nerves as well as the sympathetic chains are associated with its middle portion in the spinal region (Sushamna proper).

The mysterious force Kundalini.

This force has been variously described by modern annotators of the subject, as follows :—

(1) *Dr. Rele's theory.*

"Kundalini" is the force of the vagus (Saraswati) and is sleeping (latent) and can be aroused by certain "Yogic" exercises.

Thus, "Yoga-Kundalini Upanishad" says that "Kundalini Shakti" may be excited, when the "Saraswati" is violently vibrated

by "Kumbhak Pranayam", so that heart and lungs cease to act when the exercise is being performed.

Dr. Rele says that "Kundalini Shakti", when aroused, will overcome "one Chakra after another, rising by successive stages through the vagus."

Hindu "Yoga" books however state that when the "Kundalini is excited, it rises through the "Chitra Nadi" (Fibre of Reissoner) within the spinal canal" (Brahma-Bibar) by successive stages, overcoming the "Chakras" (their subtle centres inside the Sushamna) one after another. As vagus is outside the spinal, it is not the Nerve through which "Kuadalini" rises up. It helps the arousing of "Kundalini". Hence Sir John Woodroffe has said that it cannot be identified with the vagus Nerve.

(2) *Sir John Woodroffe's theory.*

"Kundalini Shakti" is the static form of creative energy and is therefore the same as cosmic energy. It is "the Grand Potential", a grogs form of "Prakriti" (creative energy), the residual power left after creating the world." It is thus "Prakriti" embodied and thus latent.

Ordinary creation, says Sir John, is "Involution" (change from spirit to matter). The reverse is the creation of Yoga, "Evolution" (change from matter to spirit or "Laya" *lit.* dissolution).

The above is a high metaphysical speculation in keeping with the old Hindu idea of creation and dissolution.

Now cosmic energy according to Ayurveda, as we find in the human body, may be ultimately resolved into three distinct forms, Pitta (destruction), Kapha (construction) and Vayu (regulation). If, therefore, "Kundalini" be constructive, it is one form of cosmic force.

"Kundalini Shakti" is the static centre of the whole body as well as its component parts, so that it upholds them." It cannot therefore be creative but regulative force, regulating the two opposite phases of construction and destruction going on continuously in the living body.

(*To be continued*).

"DYSENTERY" AND ITS AYURVEDIC TREATMENT

BY

BISHAGWARA K. ACHAIAH, A.M.A.C.
Bellary.

—:o:—

Acute attacks of dysentery are common in early winter and summer, the leading symptoms of the disease being a number of motions with tenesmus. The bulk of the ejecta is blood and mucus. With some, there will be a slight rise of temperature ranging in individuals upto 103 degrees. Griping pain in the lower abdomen is a constant feature before defecation, which at times is so severe as to call special attention.

Treatment divides into palliative and curative parts By palliative I mean the household treatment adopted by patients. It is popularly believed that dysentery arises due to Pittaprakopa (Metabolic principle).

1. "Khaskas powder is eaten along with food".
2. Methi seeds, unparched, about a spoonful are swallowed with milk curds.
3. The mucilaginous water of *isafgul* seeds is drunk.
4. Tender Dadima fruit is maccerated into pill-mass and about 10 to 20 grains are taken.
5. With some, the use of a sedative compound is in practice.

Jathe phala
Opium
Kesari

The proprtions in the above compound are to be so fixed that approximtely the bulk is that of a Jathe phala.

A small percentage of cases are said to be unaffected by the above method of treatment but a large majority of themare cured after the curative treatment is begun.

The curative part :—Here, as in every disease, there is a long list of compound and single drug remedies. The choice of selection for a junior practitioner from this list is not an easy task. I had the opportunity of trying the treatment given below, which is very efficacious in a large majority of cases in a short period.

Gangadharachurnam (Laghu) Grains 15
Ananda Bhairavrasa ,, $\frac{1}{4}$
Mft. Pulvis 1

Four such powders, one at every fourth hour, are given for the first day or two and next :—

Gangadharachurna (Laghu) Grains 15
Calomel Grains $\frac{1}{8}$
Mft. pulvis 1

Four such powders, one at every fourth hour, are given for four or five days and by this time a cure is effected.

Gangadhara Churna (Laghu of Sarangadharasamhita)

Salmali
Indrayava
Bilva
Lodhra
Dhatikiphuspa
Mustha
. Add one part

All the above are used in Ayurveda idependently in Dysentery and every one of them has a selective action besides, and it is this combined advantage that makes this prescription a rational one in the treatment of dysentery. "Salmali" is an astringent tonic with properties of arresting hæmorrhage. "Indrayava" and "Bilva" are well-known specifics for dysentery ; "Lodhra" acts something like rhei and is grouped under purgatives by Charakacharya and others ; "Dhatikipushpa" is used in preparing medicinal wines to set up fermentation and "Musta" is a sedative, relieving intestinal colic withont secondary bad effects. (Ash. chi. chap. 1. Solka 18 Vyakhyana).

Anandabhairav Rasa.

Purified Aconite, F.
,, Cinnabar
,, Borax
Pippili
Thrikatu
Add one part

To be prepared into pill-mass with lemon juice by macceration for three days. This is a popular metallic compound for Atisara (Diarrhoea) and reduces temperature.

Calomel of the Western Pharmacopea is used being cheap and readily available. In small doses, this is considered to stimulate Thyroidal secretion which is body's self-manufactured antitoxin. The Disinfecting property of calomel along the intestines is too well known.

Diet :—Bland diet as sago conjee with or without milk is allowed in the acute stage. Boiled and cooled water is enforced for drinking throughout the course. Rest in bed is advised as movement seems to increase the trouble. With reduction of the symptoms and return to health, easily digestible and non-irritating foods are allowed.

With these principles of diet and above medicines satisfactory cures can be effected, like the time-honoured specifics as emitine or Kurchi extracts and alkaloids. Even without the metallic compounds in the above prescriptions, patients are benefited by plain Gangadhara choorna alone.

I wish the readers of this journal to give it a fair trial in their cases.

Reports of Societies, etc.

—:o:—

ALL-INDIA MEDICAL CONFERENCE, 1929.

ADDRESS BY

COLONEL BHOLA NAUTH, C.I.E., I.M.S. (RTD.)

Chairman Reception Committee.

INTRODUCTORY.

A few days ago, a copy of the official annual report of the All India Medical Association was placed in my hands.

On opening the report, I read on the very first page this significant announcement, that "An all India Medical Association is the organ through which you can unite to fight the battles of your profession. For, it has been formed to protect the interest of every practitioner in India, to protect the interest of Public Health, of medical education and research throughout the country."

This, I take, is the avowed object and considered view of the Association, and you have met in conference today, to lay out your plans and discuss the ways and means of carrying on the work which you have in view.

When you talk of fighting battles, and make use of militant expression, you lead one to imagine that you have a real or imaginary foe in your mind's eye with whom you wish to wage war.

This perhaps is your secret which for reasons of strategy you do not wish to disclose, and I need not be curious to guess as to what or who he may be.

It is permissible to surmise however that you have gathered together to take stock of your resources and to organise your army, with a view to mobilise it against any foe, and at whichever place you may be called upon to give battle.

In taking stock of your forces, you will have to go over the whole field of the medical profession in India, so as to pick and sort out the material and personnel for your field army. You will have to study the weak points in your armamentarium, by which you will know the causes, which have retarded your growth and hindered your success, and what allies you can rely upon for help in the attainment of the object you have in view.

2. The British Medical Association has told us in one of its memorandums that the I. M. S. has been the father of the medical profession in India (1).

For the last 175 years or more, this grand service has held aloft the torch of medical lore and has helped to shed the light of Western medicine in India. Without going into heroics, as the British Medical Association has been doing, over the glorious traditions of the I. M. S. and the good work which it has done in awakening a medical and sanitary conscience in India, it is sufficient to note that your gathering here today is an eloquent proof, if proof were needed of the tribute of respect and gratefulness which the sons of India owe to the I. M. S.

3. In India, unlike anywhere else in the world, there are two medical professions which are divided by a sharp line of demarcation. One is the official and the other the non-official profession.

The official profession is the predominant partner which completely overshadows the other. The whole of the educational and research work, the medical relief and sanitation are in the hands of the official profession, and the part played by non-official profession in this domain is very small indeed.

In presenting a general survey of the medical profession, therefore, a larger part of the canvass must be necessarily devoted to the official portion.

In fact the non-official profession, being a late arrival, has forced its way on the stage, in spite of the remonstrances and protestations to keep him out of the way.

(1) Br: M. A. memorandum page 2.

The independent profession has not yet attained its adolescence, and has not taken its rightful place in the professional world

The official profession may be divided into a military and a civil branch

The higher branch in the civil department is an offshoot of the military service

About 400 military officers are lent to the civil as a war reserve of the army, they do all the administrative and large part of the executive work of the Government of India and the Provincial Governments.

The subordinate service is the provincial service which works under the control of the ministers These men are the independent practitioners who have joined the provincial service. Therefore when we talk of the independent profession, we mean thereby those practitioners who remain outside the charmed circle of the *imperial and provincial* services.

In the independent profession are included a few European Missionary Doctors, European and Indian lady practitioners, and the Indian practitioners. Outside these again are the exponents of Unani and Vedic systems and host a of quacks and charlatans of all degree.

To put this classification into the nomenclature of the country, on the civil side the medical practitioners may be divided into four castes—

(1) The I. M. S. men represent the Brahmins who like the Jews of Cochin, are divided into the white Brahmins and the Black Brahmins.

(2) The provincial service men are the Kshatryias.

(3) The private practitioners the Vaishyas.

(4) And the Vaids and Hakims correspond to the sudras of the profession.

With these few prefatory remarks I proceed to give you a general survey of the medical profession in India.

There are two military medical services working side by side in the army. The one for the British troops is composed of :—

1. *R A. M. C. Officers.*—Who come out to India on a tour of 5 years. It is a purely British service which does not admit Indians to its corps. The number of officers is 320, which for about 63,000 troops gives a proportion of 4 M Os. per mille, of strength. The number of British troops in India in the pre-war days used to be 75,000, and the number of the R. A. M. C. officers was based on that number, but though the strength of the British troops has been decreased, the R. A. M C. establishment remains the same as before. This service has no civil side, nor does it keep any war reserves in the time of peace.

2. *Military Assistant Surgeon.*—These officers belong to the I. M. D. and are attached to British hospitals for duty. This class is not recruited

from Indian but from Anglo-Indian community. They are educated at Government expense in Madras and Calcutta.

After obtainining a certificate from the Principal of the school they are attached to British hospitals for duty not as medical assistants but as dressers, compounders, clerks, storekeepers or on draft duty with troops which are transferred from one station to another.

The number of Assistant Surgeons on the army list is 739, of which 346 are retained in the army and the rest are transferred to the civil department for duty as civil surgeons, railway doctors and superintendent of jails.

3. *Q. A. M. N. S.*—These ladies, 143 in number, are specially recruited in England for service in India for a term of 5 years.

4. *Hospital Corps.*—The rest of the hospital establishment of cooks, bhishties, dhobies, ward boys. &c. is recruited in India.

5. *Dental Corps.*—This corps has been formed of late and 39 of these are attached to the Indian establishment.

The other service which is in charge of Indian troops is composed of—

1. *I. M. S. Officers*—This service is open to all British subjects without distinction of caste, creed, colour and nationality. The reform scheme lays down the proportion of Indians and Europeans as 33 to 67.

The total number of I. M. S. Officers according to the army list is 748, out of which 619 hold permanent and 129 temporary Commissions. In addition to these there are 174 officers in the army in India reserve of officers list.

Of the 748 I. M. S officers 449 are retained on the military side and 399 transferred to civil employ, which gives a proportion of ·3 M. Os. per mille. of strength on the military side.

2. *Military Sub-Assistant Surgeons*—Are 894 on the army list, 154 of which are transferred to the civil department, and the remaining are attached to military hospitals for duty.

3. *Q. A M. N. S.*—Of late 74 nursing sisters have been engaged for nursing duty in the Indian hospitals.

4. *Indian Hospital Corps.*—Since the adoption of the station hospitals system the menial staff of the military hospital such as cooks, bhishties, clerks, store-keepers has been consolidated into a corps.

Station hospitals.—During peace time the military sick are treated in combined hospitals, which are classified first, second and third class according to the number of beds in the hospital, which are calculated on the strength of the troops in a station.

These hospitals have up-to-date appliances of operating rooms, laboratories and X-ray equipment. The patients are dieted, and receive the benefit of the advice of specialists.

The number of beds in the British hospitals is 8,000 for 60,000 troops or a proportion of 13·3 beds per cent of strength. Similarly in the Indian

hospitals there are 12,000 beds for 2,50,000 troops or a proportion of 5 per cent of strength On an average more than half the beds in the British hospitals remain unoccupied throughout the year and the proportionate amount of equipment and personnel remain idle.

Field Service—On field service the procedure for dealing with the sick and wounded is different To begin with, the station hospital is discarded and left behind by the field army. General hospitals and station hospitals are established on the lines of communication and further afield, field ambulances spread themselves out to treat temporarily and despatch the wounded and the sick down the line of communication. On the lines of communications and behind the general hospitals, ambulance trains, lorries and hospital ships transport and evacuate the sick from the hospitals.

In peace time the equipment of the field units is not in use. It is kept stored up. As the different articles belong to the supply of different departments, it so happens that the equipment of a unit is split up for storage in more than one station. For example, the tentage is stored up say in Secundrabad, clothing at Shahjehanpur, furniture at Alipur, and the medical stores in Bomby. Similarly the personnel is widely distributed for duty in various places. When the army is mobilised, a place of concentration is named in the order, where all the stores and personnel are dispatched. Owing to the long distances from which the stores and personnel have to be collected, it takes quite a long time before the unit is complete, and when completed, the personnel are new to the procedure, and the returns and forms which they have to use and it takes quite a long time before the unit is really in working order.

I. M. S.—The I. M. S, as a well organised service, has been in existence for the last 175 years or more. It has had the advantage of the accumulated experience of more than five generations of distinguised officers.

It has had war experience in India since the days of Seringapatam and Plassey. It has marched on the battlefields of Africa, Persia, Mesopotamia and the Western front.

With this vast experience of peace and war, one should have expected the medical machinery of this grand service the very last word in medical organisation.

This can be fairly judged by certain well recognised tests.

(1) From the point of view of adminstration as also in the interest of tax-payer it is necessary that the departmental machinery should be economical.

Administrative economy however does not mean stinginess or parsimony. It means the making of the best use of the personnel and material without much waste and idleness. In other words it means the

turning out of the greatest amount of work with the smallest amount of labor and expense.

Judged by this test we find the medical machinery not only uneconomical but unreasonably wasteful.

For the sake of comparison, take a large town like Amritsar, with a population equal in size to the whole population of the Indian army. The civil medical department employs one civil surgeon, one health officer and a few assistants, who are in charge of the health, sanitation and the medical relief of not only the town of Amritsar, but of a large area in the district containing many dispensaries Against this the army department employs 769 officers and over 1200 assistants. This huge disparity between the two administrations in the same country and dealing with the same class of people cannot be explained by the scattered character of the military population Indeed the disparity becomes incredible when we compare the health conditions and the nature of the two populations.

The army population is uniform, healthy and in the prime of life Each man is carefully selected for good physique and freedom from all heriditary and constitutional disease. On joining the army he is at once protected against contagious and infectious disease. He is well fed, well clothed and lives in healthy barracks, built in healthy surroundings. The military discipline teaches him to live a healthy and clean life. He is regularly drilled and exercised and kept fit and healthy. In fact the theory in the army is that a man is either fit or he is unfit. In the latter case he is invalided out of the army and replaced by a fit man. These health conditions are reflected in the wards of the military hospitals which are empty, and the military sick returns which are clean.

Compared with this, the civil population is mixed. It contains the old men and women, who are feeble and dying, a fair percentage of them suffer from chronic malaria, malignant or heriditary disease.

They are frequently subject to the inroads of epidemic and endemic diseases.

Majority of them are half-starved, ill-clothed, and live in insanitary dwellings and unhealthy surroundings. They have no idea of personal or municipal hygiene. In such health conditions the percentage incidence of sickness must be and is large.

The hospital accommodation in all the Amritsar hospitals does not exceed 500 beds, while the army maintains 20,000 beds.

Is there any comparison between 500, and 20,000 beds ?

Are we to infer from this disparity that the military life is so very unhealthy as compared to civil life that it requires 40 times more hospital accommodation for its sick ? Can the army department show any justification for this enormous bed accommodation ? From these considerations we can draw but one conclusion that either the civil

department is neglecting its duty by not employing 700 civil surgeons and 20,000 hospital beds for the people of Amritsar or the army department is overdoing its duty.

But the chapter of waste does not end here. We have had occasion to note that on an average more than half the bed accommodation in the military hospital remains unoccupied thoughout the year.

Go to any large military haspital, you will find pethaps 10 or 12 I.M.S. Officers on duty with not more than 60 or 70 patients in the wards to the outside. All of them pretend to be frightfully busy employing their time in the pleasant occupation of smoking innumerable cigarettes and drinking fragrant cups of tea in the duty rooms of the nursing sisters.

The army department helps to fill their time by calling upon them to furnish endless number of useless reports and meaningless returns.

The beds which are occupied contain nothing more serious than a cut or a bruise from a hockey stick, or a case or two of venereal desease or fever.

There being no medical or surgical work, the money spent on the elaborate equipment of operating rooms, laboratary or X-ray is so much money wasted. The same remark applies to the employment of specialists.

I might explain here by the way that in the army nomenclature, by specialist is not meant a man who has spent the best part of his life in the study of a special subject but in a great many cases an officer who has spent the tail end of his holiday trip to England in walking the wards of a special hospital and has obtained a certificate to that effect.

The excessive expenditure referred to above does not inculde the cost of maintaining two sets of barracks for the British troops, one on the hills and the other on the plains nor that of transfers and invaliding.

2. The second requisite of an efficient machine is that it should be elastic.

By elastic is to be understood a machine which can adjust itself automatically without hitch or difficulty to the different conditions which it may be called upon to deal. In the case of the military hospitals they should be able to expand when we have to deal with a larger number of sick and contract when not so required.

The station hospital was devised by the R.A.M.C. for use in England, where the climatic conditions are more or less uniform throughout the year. English climate is not subject to extreme variations of temperature nor is it liable to the inroads of epidemic or endemic disease. Under such conditions the sick rate within certain limits is uniform, and can be anticipated and provided for with precision.

Station hospital system is unsuitable to Indian conditions. In this country during the hot weather, when the heat is extreme, the troops are confined to barracks and are idle. Later on, with the downpour of the monsoon, the breeding of mosquitoes and the contamination of drinking water there is an increase in the sickness and the hospitals are busy form May to September.

In the cold weather on the other hand when the air is cold and crisp and the troops are out under canvass on active service conditions, the men are healthy and the hospitals remain empty from October to April.

Owing to the rigidity of the station hospital system the accommodation can neither be increased, nor decreased, which from administrative point of view involves waste of personnel and material for half the year.

The station hospitals were adopted by the I.M.S. in slavish imitation of the R.A.M.C. under the mistaken notion that the efficiency of the R.A.M.C. as a service was solely due to their hospital system.

This certainly is not the case. The station hospital is not the training ground for the field service. It is discarded on the very first call of moblilisation. The success of the R.A.M.C. therefore must depend on other causes.

In the 1st place the R.A.M.C. get the right type of man, a practical sanitarian, whose business is to prevent men from falling sick rather than to treat the sick. The army does not need professors. The outlook of the R.A.M.C. is military and remains military thoroughout his career. The I.M.S. man makes use of the military as a stepping stone to the civil. His work in the military is half-hearted His outlook is civil and he looks forward to the day when he can discard his military tunic and put on the frock coat and top hat of a Harley Street specialist. This is really the cause of his undoing, whether in Mesopotamia, Terah or the Western front.

3 The third requisite of a military machine is that it should be simple in construction as well as in working, so that it can be put into the field without difficulty and delay.

We have noticed that the station hospital is left behind by the field army and in its place a totally different procedure is adopted in the field. We have also noticed that the equipment of field medical units in peace time is kept split up and stored in a number of stations in India, that the personnel is spread over a wide area, that it takes quite a long time before the unit can take the field and another delay is necessary before it can be put into working order. It is clumsy and dilatory.

In peace time the material deteriorates and requires to be constantly renewed to keep it in a serviceable condition.

To sum up, the medical machine of the Indian army is wasteful, both in the use of personnel and material, it is inefficient in peace time and dliatory for use in the field.

The Civil Medical Service—The civil medical service in India consists of a provincial branch, which does the executive work and plays a rather subordinate role in medical work of the Government.

The other branch is the imperial which really is an appendage of the military medical service. Between 4 and 5 hundred officers are lent by the military department for whose employments 278 civil posts are reserved These posts include administration posts under the Government of India, and the Provincial Governments for the medical relief, sanitation, educational, and research work in the country. These officers also fill a number of executive appointments such as superintendents of jails and mental hospitals, medical store-keepers and civil surgeons

Such a combination of civil and military duties, which subordinates the needs of the civil population to the requirements of the military is unheard of in any other civilised country in the world.

To yoke a race horse with a country yoke does not produce an even or a comfortable pace in the team. The grotesqueness of a doctor going to see a patient with a sword in one hand and a stethoscope in the other had attracted the attention of the Government of India, as far back as the year 1879.

To remove this anomaly they appointed a departmental committee composed of Surgeons General Cunningham and Crawford to enquire and suggest remedies. They came to the conclusion that the civil side should be separated from the military. In the course of their report they wrote, "If re-organisation is to be attempted and that such is needed, none, who are acquainted with the present system, can deny it that it can be effected by no partial measures. The division of the civil from the military duties must be trenchant and distinct."

These recommendations were comunicated to the S. of S. for India, but were rejected owing to the war office taking exception to the unification of the military services. The S. of S conveying this decision in his dispatch 80 of February 1883 wrote :—

"Any scheme by which natives of India will be excluded from the commissioned medical services of India would give rise to serious objections and the difficulty would not be removed by the expedient of forming what would evidently be an inferior service, composed solely of natives of India."

The B. M. J., the organ of the Br. Med. Association, in its February No. of 1882 was no less emphatic.

"There is one possible solution of the difficulties which result from the constitution of the I. M. S. and the complex duties in which its officers

are engaged and this solution is one which has been advocated by various able administrators in both services. The first step must be a complete separation between the civil and military services in India."

The Br. Medical Association has evidently a very short memory.

Towards the year 1897 the R. A. M. C. had fallen on evil days. It found it difficult to get sufficient number of recruits. The war secretary (1) wrote and asked the S of S for India if the Government of India would agree to the proposal of permanent separation of the Indian portion of the R. A. M. C. from the Home Establishment if its strength were increased by 40 officers (2).

The Government of India in a very superior despatch accepted the proposal but added that the increase of 40 officers should be made in the civil cadre of the I. M. S. and not in the R. A. M. C. Lord George Hamilton who was the S of S for Inda saw the game which the Government of India were playing. They were pushing more and more I. M. S. officers into the civil department on one excuse or another. He wrote in the course of his despatch No. 45 of May 1899, "I am unwilling to accept proposals based on the assumption that sufficient medical qualicfiation will never be found in India or elsewhere outside the I. M. S." This was the first hint of the Indianisation of the I. M. S.

In reply, the Goverement of India agreed with the original proposals of separating the civil service, but they played their card of unification of the military services for all it was worth.

In the years 1903-8 riding on the crest of the tide of the Morley-Minto reforms Lord Morley drew the attention of the G. of India to Lord George Hamilton's despatch in the following terms.

"Since 1899 successive secretaries of State for India have drawn attention to the objections to indefinite extension of the cadre of the I. M. S. for the purpose of providing for miscellaneous appointments, that service, though it may offer well qualified candidates, is not the only and may not be the most economical source of supply. Notwithstanding the necessity for restricting the cadre of the I.M.S, it has in recent years continued to increase and apart from other objections, its further increase would be likely to cause serious difficulty in the matter of recruitment. I have consequently decided that the time has now arrived when no further increase of the civil side of the service can be allowed, and when strong efforts should be made to reduce it by gradually extending the employment of civil medical practitioners recruited in India" (3).

To this dispatch the G. of India replied that about one third of the I. M. S. officers in the civil employ did not form part of the army

(1) Land Lansdowne.

(2) Lov. Com. Report para 7 p. 11.

(3) Lov : Com. Report para 8 p. 13.

reserve and there would be no objection to the transfer to the independent practitioners, of the civil appointments held by them, but any such transfer should be gradual, tentative and from the bottom, and that the appointments reserved for the I. M. S. men should be such as to maintain the attractiveness of the service and administrative efficiency (1).

Lord Morley agreed and asked to be informed of the measures which the Government of India would suggest in order to carry out these proposals.

At this stage Lord Morley vacated the office, and with the advent of Lord Crewe the policy and the tone of the Government of India underwent a complete change. They wrote to the S. of State that they had written to the local Governments with the result, now found, that they had gravely underestimated objection to the contemplated transfer of appointments.

In the year 1911 the number of Indians entering the I. M. S. was materially increasing, this alarmed the army department, and they proposed to make the I. M. S. a purely civil service, and to organise the Royal Army Corps in such a manner as to enable it to fulfil all the military requirements (1).

These proposals, however, came to nothing.

The Public Services Commission in the course of their enquiry observed, that "the dependence of the civil medical administration on the military was a subject of complaint on the part of most non-official witnesses."

They therefore laid stress on the necessity for calculating separately on their merits the needs of the army and of the civil administration and for abandoning the idea, that the civil medical administration should be dependent on the requirements of the military service.

They recommended the formation of Imperial and Provincial Medical Services and the fixation of the number of Military officers employed in the Civil Department.

The report of the commission was pigeonhold from 1915—1917.

Outside the service circles, the Indian National Congress, the organ of the educated Indian Community, had in its session of 1893 demanded "that the civil medical services of India should be reconstituted on the basis of such services in other civilised countries, wholly detached from and independent of the military service."

On the other hand the officers of the I. M. S. had also sought outside help and had enlisted the co-operation of the Br. Medical Association in order to oppose any attempt to Indianise the service or to separate the civil side from the military (2).

(1) Lov. Com. Report para 9 p. 13.
(2) Lov : Com. Report p. 15 and Br. Med. a Memo Oct. 30th 1913.

This external agitation for and against the formation of a separate medical service culminated in the famous resolution moved by the Honourable Mr. Shastri in the Imperial Legislative Assembly on the 8th of March 1918. In the course of his famous speech Mr. Shastri said, "That the coming in of the I. M. S. service in the civil employ shuts out Indian talent, hinders progress of the independent medical profession and makes the civil population for their ordinary needs depend upon a service, which is called upon to serve in the military both at beginning and at the end of their career and in war time would not be available at all. When, therefore, we are asking that a complete separation should be made, it is impossible for us to countenance the suggestion that in order to make the civil employment attractive to officers' their salaries should be raised, and a further drain imposed upon the country———let me say that it must not be allowed any more to dominate the whole of the civil medical profession, to keep the children of the soil out of what is their rightful place, and generally to check the growth of the independent medical profession and make the professorial and research chairs their private appanage."

The result of all these internal enquiries and external agitation was that the Government at last made their mind to Provincial and Imperial service and under the regulations framed by the Secretary of State in council in 1923 under rule 12 of the Devolution Rules, the number of appointments which are to be reserved for the I. M. S. was fixed at 268 in the provinces.

This is the utmost yield of 50 years of political agitation.

This is a convenient place to consider the grounds on which the continued combination of the civil and military side of the I. M. S. is insisted upon as also the grounds on which increased Indianisation is opposed.

The advocates of the combined civil and military service base their case on certain grounds which may be summarised as follows :—

(1) That it is necessary for the Indian army to have a reserve of medical officers who could be usefully and economically employed in the civil department.

(*a*) This argument had some weight in the old days when there was no independent profession in India, to supply medical medical men in time of emergency. That, however, is no longer the case. As a matter of fact over 1,000 civil practitioners had actually joined the I. M. S. as temporary commissioned officers during the Great War, and there are at present over 175 officers on the reserve list of the Indian army.

(*b*) The R. A. M. C. has no such reserves nor any other army in the world maintains them.

(c) During the course of examining the military medical organisation, we had occasion to note that the army department has a much larger number of I. M. S. officers on the active list, who are over and above their requirements, the army reserve is there in actual employment.

(d) The officers who have been in the civil employment for some-time, deteriorate from the military point of view, and cease to be of any use as reserve for the military service.

The report of the Esher committee is conclusive on this point (vide section 3 para 47).

"Military opinion as represented to us by many witnesses of high authority and recent experience in the field was practically unanimous in holding that the officers of the I. M. S. lacked the necessary training for work in the field. This defect is attributed to their inferior military training under the antiquated regimental hospital system now abolished, their ignorance of the principles of military administration in the field, their lack of familiarity with the latest developments of military hygiene, of preventive medicine, and of mililitary medical science.

It is clear that though in theory the outlook of the I. M. S. in the past has been mainly civil, the best officers have secured civil appointments as early as possible, and have lost touch with the military side of their profession. They are consequently at a disadvantage when recalled on the outbreak of the war or reverted towards the end of their service to hold military administrative appointments."

This is as strong a condemnation as it can be, of the present system of keeping the army reserves in the civil employ.

(2) The employment of I. M. S. officers in the civil department is an attraction to enlist good class recruits.

(a) This can be of no advantage from the point of view of the military service, because as we have seen above, the man who goes to the civil department is lost to the military, whether he comes back to it or remains in the civil.

(b) The army population is composed of healthy men of good physique. It needs sanitarians not professors.

(c) Good class medical men do not care for the services at all whether it is the I. M. S. or any other service. It is only such men who cannot make a living in their profession who seek the army service.

(3) That the military rank gives the holder a higher social position, therefore if the two sides are separated, good class of recruit will not join without the attraction of the military rank.

It must be borne in mind that the army surgeon is a doctor first and a military man afterwards. His worth and value lies in his profes-

sional skill and not in the tinsel of his army rank. A good man, who is keen on his profession, will join the civil medical service whether he can do so with the army rank or without it.

(4) A preponderance of the British element is necessary for the efficient administration.

Our examination of the medical machine has shown that it is highly inefficient and unwork-man-like. Besides this, the reports of Mesopotamia and other campaigns prove that this claim is hollow and without foundation, these reports have further proved that, given an equal chance, the Indian officer is equally capable of efficient administration.

Before Examining the Government of India communique of 1928 let us pause and cast a retrospective glance at the sequence of events which we have been considering in the above paragraphs.

During the latter part of the last century, the question of reorganising the medical services was discussed, from the point of view of economy and administrative efficiency as a purely domestic concern.

On the military side it was realised that the services had become antiquated. The existing system of maintaining two services side by side was an anachronism, which could be justified only in the days, when the army of the East India Company was separate from that of the crown. It was felt that the machinery needed overhauling, and a unified service was therefore suggested.

But the War Office found it impossible to accept these proposals owing to the impracticability of admitting Indian candidates in the R.A.M.C.

On the other hand the requirements of the civil department were increasing every day, and there was a demand for more teachers, research workers, and sanitarians, while the supply of recruits was becoming more and more inadequate in quality and quantity. It was therefore considered necessary to form a separate civil medical service. This scheme was frustrated by the vested interests of the I. M. S.

In the period of which we are speaking small clouds had begun to form on the political horizon of India and gather round the Congress pandal in their annual gatherings.

The spell of the magic of Swaraj had been breathed by the Grand Old Man of India, and this acting like a charm had fired the imagination of Indian Nationalism, and stirred in its breast new hopes and ambitions.

The reactionaries of Anglo India shook their heads at the very idea of political advance. They were quite happy with their Noahs arc of the old constitution. But there were men of political foresight who had warned them to take measures in time to save the ship of state from the fury of the storm.

The Indian politician had very early realised that the monopoly in the services was the keystone in the arch of the Indian Autocracy. With

the new strength of nationalism, he attacked the arch with vigor and demanded Indianisation of the services.

Lord Morley, who was at the helm of the ship of state, had found it difficult to supply the increased demands of the services. Now he began to feel the pressure of Indian Nationalism from outside. Moreover he realised that the demand for Indianisation was not only just but natural. He therefore suggested to the Government of India that a certain number of miscellaneous appointments may be released by the I.M.S. and handed over to the independent profession as the only way of getting over the double difficulty in which he found himself. By this means he thought he could relieve the difficulty of the supply of recruits and meet the political demand of the Nationalists. He further hoped that in time to come as the Independent profession improved, it could supply larger number of recruits and make India independent of outside supply.

But this was not to be.

The I. M. S. man thought otherwise.

He said there was no dearth of the supply, only the service had ceased to be attractive. The pay was inadequate as it had not kept pace with the increased cost of living, the income from the private practice had diminished owing to growing competition of the private practitioner; the house accommodation was becoming scarce; leave was insufficient; and worst of all the future was uncertain (1).

He was living under the rumblings of political clouds, and he did not know what was going to happen tomorrow.

As for the idea of increasing the number of Indians in the service, it was simply unthinkable. The Indian, coming as he did from non-martial races, and of inferior social status was disliked alike by the Britsh Officer and by the Indian ranks. His professional knowledge was not of a high order, it being more theoretical than practical; he lacked initiative and the sense of taking responsibility (2).

As regards the independent practitoner, he will take a long time to learn the rudiments of professional ethics and sense of honour. Therefore the service man saw in these proposals of the Secretary of State for India a threat to the service and a direct challenge to its very existence (3).

He raised the alarm, and the cry of the service in danger was taken up by every service man in the country.

A general mobilisation was ordered and every available man was called to arm.

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(1) Br. med. A. memo p. 2 and 3.
(2) Memo p. 5 and 11.
(3) Memo p. 3.

He proceeded to lay out his plan of compaign with commendable zeal and consummate skill. Every weapon, clean or otherwise, was brought into use and it may be said to the credit of the service man that he did his work well and thoroughly.

Hitherto he had been fighting underground and under the cover of the D. G. I. M. S. who spoke with the tongue of the Government of India. Now he came out in the open.

By way of propaganda, he collected and catalogued the wrongs which he was smarting from, not forgetting the objections which he could think of against Indianisation. A pamphlet, prepared and printed in Madras, was sent out by thousands to all the medical schools and hospitals of Great Britain and Ireland, to all the Anglo-Indian officials and non-officials, and the Anglo-Indian press.

Next he proceeded to give the Secretary of State battle on his own ground and besiege him in his own citadel.

Every officer who went home on leave, like Peter the Hermit, trudged from school to school, and preached in the pulpit of every hospital a holy war and called upon all the true believers to save the service from the hands of an infidel Secretary of State (1)

He raised a storm round the India Office. Memorials were sent in his favour by the Indian Services; by the boxwallas of Calcutta; by the shopkeepers of Bombay; and by the planters from distant Assam. He interviewed and canvassed all the officials in and outside the India Office, and duly approached the members of all the commissions which were appointed from time to time. The British Medical Association, which has always been inimical to the interest of the Indians as against those of the Europeans, took up the cause of their allies with alacrity.

This body is the trade union of the medical profession and it adopted trade union methods. A naval and military committee was formed to whom the conduct of the active operations was entrusted. This war council included old warriors of the type of Elliot, Patrick Hehir, Giffard, and O'kanealy. They were our old friends but with the new faces of the British Medical Association. This Committee reprinted the Madras memorandum as the official publication of the Association. A deputation waited upon the S. of S. headed by the redoubtable Lt.-Col. Elliot who warned the S. of S. of the dire consequences which would befall the Government of India if the pivot service on which hung the administrative machinery of the Government was not kept well oiled and greased (2).

(1) Br. Med. A. Memo p. 2.
(2) Br. med. A. memo p. 25, 26, 27, 28.

An ultimatum was delivered in the shape of the memorandum. A general boycott was called in all the schools and hospitals of Great Britian (1).

The position had crystallised into this, that the harmless suggestion of Lord Morley had developed into a serious *casus belli* between the Government and the service. The I. M. S. with the help of the British Medical Association had cut off the supply of recruits and warned the blacklegs from breaking the boycott. They had brought pressure to bear on the Government from every imaginable source that not only the presence but the preponderence of the English element in the service was necessary for the very existence of the Government of India. In the midst of these operations, Lord Morley vacated the India office. His successor was a man of a different type, whose views on the subject were more in harmony with those of the I. M. S. He saw that the independent practitioner was the *bete noir* of the service man, he dropped him overboard, and eliminated him from all further discussion. By this means a truce was called. And in the peace negotiations which followed, the questions for consideration assumed a different shape.

The matter which was referred to a number of Committees and Commissions was neither the improvement of the indigenous profession nor the Indianisation of the service, but how best to placate the irate I. M. S. man. The pages of the roports of these commissions are a sad record of the struggle between justice and iniquity, between fairplay and vested interests. This brings us to the time of Mr. Montague.

The commissions had done their work, their labors had culminated in the recommendations of the Lee Commission which has very aptly been called the Lee Loot. Poor Mr. Montague, he had his conscience in one hand, the Lee Report in the other. His hands were tied. He fought for the righteous cause of Indianisation, but the odds were heavily against him. He made the best bargain for India, which could be made under the cirumstances. Peace was singned, the I. M. S. man won all along the line. He received the Lee Loot in war indemnity and placed a die hard at the elbow of the secretary of State for India to give a reactionary turn to the policy of the India office.

The Government of India Press Communique of 10th May 1928.

Now we are to examine the communique a little carefully and at length.

Under the regulations framed by the Secretary of State in Council in 1923 under rule 12 of the Devolution rules, 268 appointments were reserved for the I. M. S. in the provinces.

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(1) Brit. Med. A. Memo p. 38.

The new scheme under the Press Communique will reserve only 178 posts in future, thereby releasing 90 posts for the provincial medical services. The adoption of the new list of the reserve posts will leave on the civil side a surplus of I. M. S. officers who are holding appointments which are at present reserved for that service. The existing rights of these officers will be fully preserved, and prospects equivalent to those afforded by the present list of reserved posts will be retained for them.

These prospects will be allowed to diminish only pari passu with the absorption of the surplus, which will exist, until the number of I. M. S. officers now in civil employ is equal to the number of posts reserved for them in the new list.

This means that the new scheme will not come into force, much before another 20 years. So there is no hurry, but we might as well examine the scheme.

On the face of it the scheme looks too good to be true. From our previous experience we know that the Government of India is anything but impulsive, it is not given to acts of spontaneous generosity. To take 90 posts from the mouth of the I. M. S. and hand them over to the provincial service without any provocation is generous indeed, but it is not like the Government of India.

We may therefore be pardoned for seeming ingratitude if we venture to look at the old horse in the mouth, to make sure if he has got any teeth.

The figures given in the communique are based on two facrors.

1. The war reserve of 200 officers (134 European and 66 Indian officers.)

2. Civil requirement. 102 residuary officers, 46 in the provinces and 41 under the Government of India plus 15 officers who will not be available on account of sickness.

To provide employment for 302 officers 237 posts will be required, the remaining 65 will constitute the leave and study leave reserve.

Of 302 officers 212 will be European and 90 Indians.

The 237 posts will be distributed as follows :—

Under the Government of India 30 posts, under the Foreign and Political department 29 and under the Provincial Governments 178.

Annexure 1 of the communique further gives the distribution of the 178 provincial posts and annexure 2 gives the distribution of the posts which are open to both communities.

From this distribution we gather that :—

Of the 237 posts, 171 will be filled by Europeans and 66 by Indians, that out of this number 141 will be reserved for Europeans and only two for the Indians, and the remaining 94 will be open to both Europeans and Indians.

Of the 105 Civil Surgeons 90 are reserved for the Europeans, none for the Indians and 15 are open to Indians and Europeans.

Of the 15 professorial appointments, 12 are reserved for Europeans, 1 for Indians and 2 are open to both communities.

In the political and foreign department, only 3 posts are open to Indians and Europeans and the remaining 26 are reserved for the Europeans.

One may be sure that if the Indians do ever get these political posts, it will be one of those salubrious stations, like Sibi, Siestan or Maskat.

Curiously enough the annexures are silent about the appointments of Inspector Generals of Hospitals, Provincial Surgeon Generals and Directors of Public Health. We are left to imagine that these posts are also provincialised.

It is a well known fact, however, that these posts are invariably filled by promotions from civil sergeons and if the civil surgeoncies are so carefully reserved for Europeans it is not likely that these posts will be given to Indian I.M.S. officers, much less to the provincial services. The same remark applies to the post of D. G. I. M. S. and Health Commissioner with the Government of India.

Is there a need to make any comment on this benevolent jugglary except to recall the story of the wily blind man, who when distributing sweets to the village children, finds his hand invariably in the mouth of his own grand-children.

To give you a concrete example of this rob Peter to pay Paul policy, how it will affect the Indian interests.

In the Punjab 7 civil surgeoncies are held at present by Indian I. M. S. Officers. In the new scheme there will be none. Are we to understand that the Government recognise their obligation to a handful of Europeans in leaving 11 Civil Surgeons of their race, but in the case of the vast Indian population they repudiate their obligation in taking away the 7 Indian Civil Surgeons.

Out of the 3 professorships held at present by the Indians, there will be one under the new scheme.

Similarly in Madras Presidency according to the combined civil list, 6 District Surgeoncies are at present held by Indians; in future only two will be open to them in common with the Europeans. The same is the case in other provinces. On examining the scheme carefully, we thus find that the provincialising of the 90 posts, which the new scheme contemplates will be effected at the expense of the Indian and not European interests.

This is regretable and it is more so, as the dispatch embodying these proposals was presumably prepared by an Indian Secretary and signed by an Indian member in charge of Health, but our grief is

somewhat mitigated when we come to remember that the honourable author of the dispatch was a signatory of the Lee Commission report. But may we ask, on what ground has this racial discrimination been introduced in an imperial service.

Communalism is condemnable in all conscience in every walk of our national life. It is simply damnable when applied to Imperial services, which are the backbone of efficient administration, It demoralises the service and undermines its efficiency.

It is astonishing that the Europeans, who are so loud in blaming Indians for communalism, should be the foremost to demand it for themselves on racial grounds.

And even if communalism was allowed in I. M. S., on what principles of equity is the disproportionate distribution justified that a microscopic minority community should monopolise the largest share of all posts of authority and emolument.

May we enquire in all fairness as to why the proportion of 33 to 67 has not been maintained throughout the distribution of these posts, and if 90 posts had to be surrendered to the provincial service, why were they not taken in the same proportion out of the posts at present held by Europeans and Indians.

I must warn my friends of the provincial services not to be jubilant over this windful of 90 posts. The Gods have a way of playing hasty tricks. They give with one hand and take away with the other. Some of these posts will be advertised and such conditons will be demanded that the provincial service man will have no chance of getting them. The chain of the strangle hold is complete, the links of the chain extend from the district surgeon to Simla and from Simla to London. A post may be provincialised, even sanctioned by the local Government and the Goveanment of India, but it may be cancelled at the last minute by pressure and wire-pulling at the India office. This is how the good intentions and the change of heart a Secretary of State are frustrated by vested interests in actual practice.

Private Practice. —In a memorandum which was prepared by the Br. Medical Association for presentation to the Royal Commission on the Public Services in 1914 we read the following significant remark :—

"Less than a quarter of a century ago, the private practice among all classes and races in India lay in the hands of the officers of the I. M. S. and large fees were frequently and compratively easily obtained. Any man of average ability and industry could, especially in civil employ, be sure of considerably augmenting his income by means of private practice, whilst a few made considerable sums of money thereby.

Those were the halicyon days of the official practitioner, when he was the sole monarch of western medicine, and there was no one to dispute the empire of his private practice.

He was on the top of the tree.

He owed his position to more causes than one.

In the first place he had the prestige of his race. As a white man, whatever he did or said was superior. He had his official position, in virtue of which he formed part of the Government machinery.

He found a place on the municipal and district boards. He was present at all functions, official and non-official, at every meeting and at every place. By his word, he could accept or reject candidates for Government posts, by his writings he could grant leave and pensions. His word had weight, his writing had value. His consultations were sought after at high price. The majority of the population in an Indian district is official. The officials and their families were on his panel, which assured him his clientel and practice. He need not keep a consulting room nor spend a penny on the parphernalia of his profession. This was provided for him by an obliging Government. There was at his disposal a well equipped hospital, a trained staff and every facility for pathological and clinical investigation. In large towns, private wards were built for the benefit of his paying patients.

In the hey day of his greatness, the practitioner had omitted to earn the good will of his client—the patient who was the source of his income, and prosperity. He paid no heed to his customs, his habits or manners and neglected to learn his language.

The Indian by nature is sentimental. He is quick of perception, sensitive equally to kindness and insult The physician to an Indian is a friend, a guide and a confidant. He seeks his aid in pain, his advice in trouble and lays bare his heart to him in sorrow. The key to the Indian heart is kindness, and the key to the heart of the sick is sympathy.

These sacred mysteries of the healing art are not learnt in schools of medicine, they are acquired by experience.

This mystic ritual was never practised by the European practitioner.

His brief and short visit was looked upon by his patient as official, not professional. His peculiar foreign mannerism and his monosyllabic conversations lacked the sympathy which he needed most.

Hitherto the official practitioner had to face only an ill-conditioned vaid or hakim whom he could afford to ignore or even to treat with contempt. But the wind had veered and the tide had turned. A new actor had appeared on the stage of private practice. The new nationalism had given birth to the private practitioner.

The newcomer was educated in the same school, was armed with the same weapons of precision, of diagnosis and treatment. He was his

equal in intelligence and professional skill, but superior in diligence and the knowledge of his patient, gentler in manner, sweeter in speech, his heart beating in rythm with the systole and diastole of his patients' heart, sharing with him his joys and sorrows

The challenge was short and the tables were soon turned.

The Br. Medical Association in its memorandum dated 1910, page 12, para 4 thus sorrowfully describes the result of the new competition:— "The indigenous profession is in a very active and virile state, and instead of the officers of the service encroaching on the rights of independent members of the profession, it is they who have acquired the practice formerly enjoyed by the officers of the service."

The story of the birth of the independent profession is romantic

In the early days of John Company the need was felt for medical assistants. A few young Indians were trained, and given employment in hospitals as hospital mates, and later as black doctors. Later still, as the demand increased, it was found necessary to improve their quality. The first medical College was opened in Calcutta in the year 1822, and in the wards of this venerable institution was born the infant independent profession of India.

As the object of the training was to produce assistant, and not a rival, the birth of the infant was not hailed with joy.

It was regretted. The resentment employed means to prevent its birth, but it came into the world all the same, in spite of all contraceptive precautions.

The infant, contrary to the exoectations of the parent, showed signs of precocity and gave early promise of rebellion.

The parent frowned at him, and neglected his care. He denied him his patrimony.

Unforunately the child had inherited the mental weakness of its parents. The parents had suffered from a mental affliction called swollen head, the chief symptom of which was megalomania.

The mental weakness of the offspring took a different form.

He could see and appreciate only one color, the white, the other colors were invisible to him. The new disease was named by an Ahmedabad pathologist as cerebral albinism, or popularly slave mentality.

Further investigations proved the malady to be due to microbic infection and a carrier called the titles was also discovered.

To my mind the chief cause which is responsible for the utter demoralisation, which has overtaken the profession, is its slave mentality.

Slave Mentality is a universel disease in India. It afflicts alike the poor and the rich, the high and the low. It has demoralised the whole nation, and dereriorated eveay fibre of its body politic.

So far as the medical profession is concerned, this malady is found in two forms.

In the first form it creates an inordinate craving for the loaves and fishes of office. The victim of this disease looks upon Government service as the end all and be all of his ambition. The fetters of the service have a peculiar fascination for him. It makes him short sighted, and restricts his vision to the narrow paths of service life. He cannot see the green fields and the beauties of nature beyond, nor hear the song of birds.

Service of all kinds is demoralising ; it stunts the growth, restricts the action and makes the servant the slave of his master. In the hands of his master he is an automaton, a mere marionet, which can only dance when his master pulls the string. He cannot speak, his mouth is closed. He cannot act, his hands are tied. He cannot think, he has lost his soul.

And suppose you do get Government service, and all the posts in Government are given to you, at the most there are not more than a few hundred of these posts. Will that provide bread for the thousands of medical practitioners of to-day, and many thousands more of to morrow.

Be true to your profession and to your name. Remain independent and do not think of bartering your independence for a mess of pottage. Keep your head high, and fix your gaze on the realm of nature which the prodigality of scientific research opens out before you.

Another toxic effect of this malady is that it kills out the moral fibre of self-help, self-respect, and independence of character and brings about a state of inertia of action, paralysis of faculties, and renders the victim utterly helpless. He becomes listless and apathetic, vacuous in mind and boby He can do nothing for himself, even for every little thing, he needs the help of others.

For your professional work, and for earning a living, you require infirmaries to treat the sick for educational and research work, you need laboratories and schools, and lecture halls.

You sit helpless. You have no means and no resources. You cannot build them. You wish the Government to build them, equip them, for you want them to hand them over to you ready made. Swaraj is selp-help, without selp-help there can be no Swaraj. In the school of selp-help as much as in the school of medicine a long period of preparation and probation is necessary. The lessons of Swaraj cannot be learnt in a better school than a school of medicine. Be pioneers of the future nation of India. Build your own hospitals, and other institutions, manage them yourself, and show them what indigenous talent can do and make medical swaraj the object lesson to the whole of India.

The medical services committee presided over by Sir Verney Lovett make the following observation in their report on pages 21 and 23 dated 1920 :—

"However much medical graduates may multiply, they will not spontaneously incline to practise in the villages and smaller towns where no dispensaries have been established by the Government or local bodies. An increasing number of graduates will multiply aspirants for Government service or that of local bodies. An increasing number of graduates will multiply aspirants for Government Service and will increase the number of independent practitioners in the cities and large towns but will not by itself advance western medicine or sanitation in the country at large."

The Lovett Committee with the rest of Anglo-India imagine that the country is rich, and that the pagoda tree grows wild in rural India.

Perhaps they are right from their point of view.

When they ask for increase of pension and pay they get it, when they demand free passages to England they get it, when they cry for house accommodation, Government builds palatial buildings for them and charges nominal rent. Yes God is Great, the Government is good, and the country is rich.

But when money is required for sanitary reforms, for medical relief, for the supply of drink-water, for building modern tenements, or town planning, there is a different story to tell, there is no money in the country, the people are fatalists, they can only die but once.

The private practitioner does not go to the village through any perversity of nature or cursedness but because he cannot make a living there.

The condition of poverty in the Indian villages is appalling. 80 to 85 per cent of the Indian population lives in village. Many of them live on the verge of starvation, millions live only on one scanty meal a day; they are insufficiently clothed and live in mud hovels or thatched huts without any regard to sanitation or cleanliness. The surroundings of their huts are infested with mosquitoes. Poverty is writ large on every face.

In this condition of semi-starvation they have no power of resisting disease. When they fall ill, they find our allopathic friend too expensive. They cannot buy the medicines which he prescribes, nor have they the means of procuring nourishing food, warm clothes, soap and hot water which he recommends.

The village hakim or vaid with his homely pill and potion worth a pice or two, is good enough for them. They might try a charm or incantation or some other form of quackery, but not the devotee of western medicine.

It is simply an economic question. People starve, because they are poor; they fall ill because they are poor, they call in a quack because they are poor, and finally they die, because they are poor.

In such poverty stricken surroundings, western medicine and western methods are out of place.

For the attainment of the object you have in veiw, the first and foremost desideratum is

1. *Discipline*—Without discipline, you cannot raise the morale of a demoralised army.

In old times in our country the system of education imparted to the young was such as to engrave on the mind of the youth a respect for learning, reverence for age and obedience to authority.

This triple respect which formed the sacred foundation of our national discipline and culture is being undermined by the strange ideals which the Western education is holding forth to our new generation.

2. *Organisation*—The second requisite for the betterment of the profession is Organisation.

You have heard the story of how the I.M.S. with their disciplined organisation have suceeded in their agitation and brought down to their knees the S. of S. for India and the Government of India.

You have learned the rudiments of your profession from the I. M. S. Learn also from them the important lesson in discipline and organisation. Unless you walk in their footsteps and follow their methods you will not be able to hold aloft the flag nor maintain the high traditions of the profession which you will receive as a sacred trurst when the time comes for the I.M.S. to hand it over to you.

3. *Co-operation.*—We are students of science, we must follow the methods of science and pursue its ideals. The ideal of science is the pursuit of Truth and the conquest of nature for the service of man.

The victory over the forces of nature cannot be gained by individual efforts, however great and colossal. Only by combined efforts can man conquer nature.

To bring about a combination of human efforts, science had to span the oceans and dismantle the barriers of mountains and deserts, and bring the members of the human family together, and it was not till the united efforts of mankind were consecrated on the altar of humanity that nature yielded the jealously guarded treasures of her secrets. The methods of science are collaboration and co-operation.

The life of a recluse who told his beads under the banyan tree in an isolated village is gone for ever.

Modern science has placed before us the struggle for existence as the stern reality of life. We have to fight in phalanx and not as individulas if we mean to survive in the struggle.

We are denizens of a larger world and citizens of a larger republic. We have to collaborate not only with our own countrymen but with fellow citizens of a larger empire.

4. *Mutual trust.*—But co-operation and collaboration is possible only where there is mutual trust and confidence.

Complete confidence can be inspired only when underlying your actions is no selfish motive, no tinge of jealousy, no desire of personal gain or popularity, when your motive is pure and disinterested. You can do a lot of things by co-operation and collaboration with your fellow brother practitioners which are beyond your powers individually.

5. The highest teaching of religion is charity, self-sacrifice and love. These teachings have been translated into practice by your profession. Medicine is the practice of religion.

The consecration of medical science in the service of humanity to allay pain and relieve suffering has appealed to the noblest instinct of man in all times.

India, the home of religion, is the home of charity. The charity of India is multifarious. It digs wells for the thirsty, builds shelters for the homeless, clothes the naked and feeds the hungry. Its charity is indiscriminating. It gives to the hand that is stretched whether that of a deserving beggar or the hand of a hypocrite. It is catholic, it makes no distinction of caste, creed and color. It is boundless. Eleven million of beggars, according to the last census, are fed, housed and clothed daily by Indian charity, without a single poor-house in the country. If India is spending at the rate of 2 annas per beggar per day, she is spending 14 *lakh* rupees a day in charity. She is regardless of the enormous national loss it involves—moral, intellectual, manual and economic. What a stupendous flow of misdirected benevolence! Could this Niagra of charity be harnessed and its spontaneous flow directed into channels of utility! What a boon to humanity. What problems of sanitation and medical relief could we not solve. How much could we not do to relieve unemployment.

This stupendous task might be attempted, if not with camplete but only partial success.

No one can attempt this better than a medical man. No one can reach nearer to the heart of the charitable than the man of our profession.

The Unani and the Vedic systems.

No scheme of medical reforms can be complete without taking some notice of these ancient systems.

It is no use shutting our eyes to the fact that these systems have played in the past and are playing up to this day a very important part in the Indian economy. Millions of people flock to the vaid and hakim every day for relief or cure. If the Hakim did nothing but harm, if he always killed but never cured, it is inconceivable that so many people, however ignorant they may be, would trust their life and health into his hand. In the face of this prima facie evidence it is unfair to deny some good to the Hakim. The attitude of lofty contempt, which the profession has adopted towards these worthies, is unfair. In the first place it has made the hakim a martyr in the public eye. The hakim is more popular to-day than he was ten years ago. One hears from the lips of well educated gentlemen marvellous stories of cure by hakim where eminent doctors had failed. In the second place it has given rise to quacks and charlatans of all degree as can be witnessed by the advertisements in the Indian Press.

I hold no brief for them. All I suggest is that by adopting a more sympathetic policy, we can make these ancient systems useful to the poor in remote rural areas, which lie beyond the reach of our dispensaries. At present the hakim has no prescribed course of training and passes no examination, and it is difficult to differentiate between a respected and popular hakim and a quack. I therefore suggest that as a first step, facts should be collected, with regard to the number of vaid and hakims, their modus operandi, the length and the course of their training, etc. As a second step, to persuade these men to fix a course of training of their own and a system of examination and granting of certificates.

After this has been done, it would not be difficult to introduce by degrees modern science into their carriculum, and by these stages to bring them into line with modern requirements. I know a number of hakims and vaids who realise their difficulties and are willing to learn and remove defects, but they want a helping hand

Gentlemen now I bring my address to a close. I thank you for giving me a patient hearing.

I have retired from the service and have retired from public life and you have dragged me out of my peaceful retirement. You have made me speak and I have spoken.

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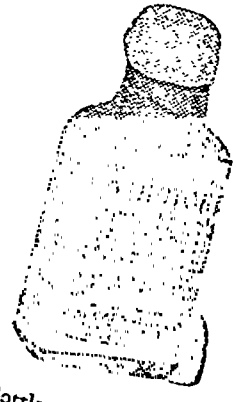

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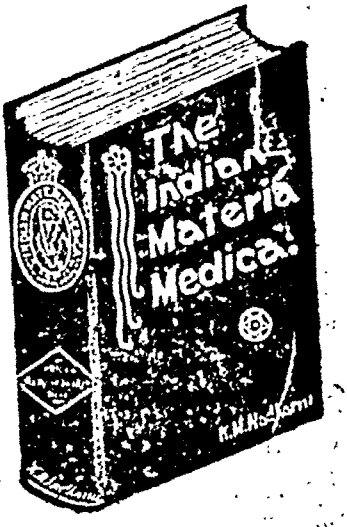

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The Journal of Ayurveda

or the Hindu System of Medicine.

Vol. VI.] June, 1930. [No. 12.

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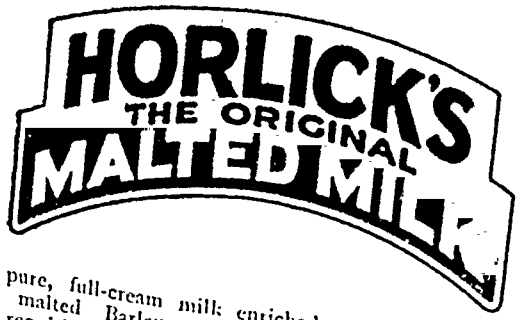

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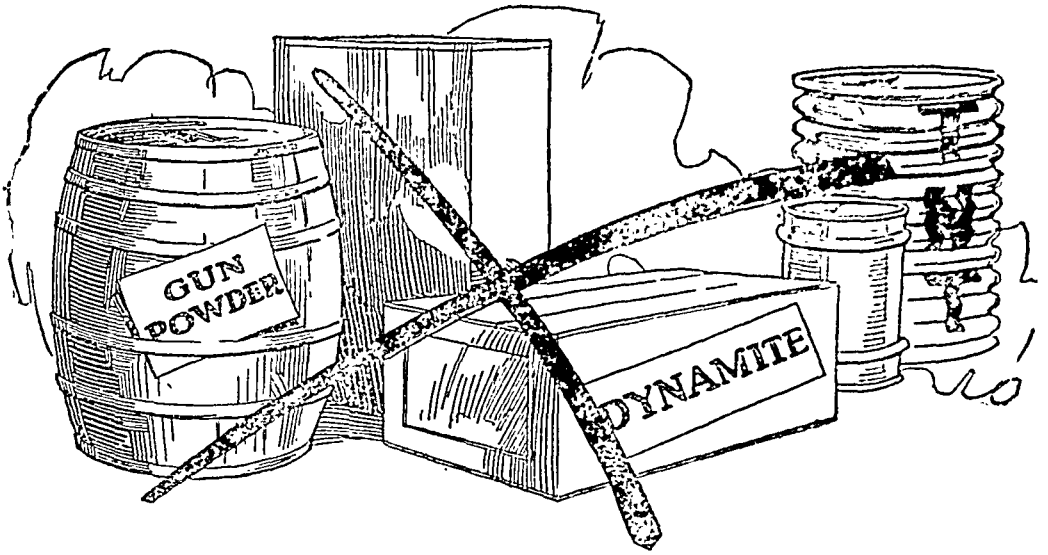

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THE JOURNAL OF AYURVEDA

Vol. VI.] June, 1930. [No. 12.

Diagnosis and Treatment

It may now be asserted without any fear of contradiction that the ultimate end of all medical sciences is Diagnosis followed by Treatment. Knowledge of allied sciences, such as Physiology, Pathology, Bacteriology, Chemistry, Botany etc. is necessary only so far as these help diagnosis and then treatment.

Of the two ultimate results, diagnosis is, no doubt, more important, as, without it, treatment becomes impossible or useless. As soon as a physician becomes sure of his diagnosis, he may confidently hope to treat the case successfully, provided, of course, the disease does not take a serious turn abruptly or nature does not fail at the critical moment.

It must not be presumed however that treatment is less important—rather it is equally important with diagnosis—as wrong treatment often kills more than does wrong diagnosis. The truth is that right diagnosis has always been considered more difficult than right treatment. It has been found that out of every five deaths, diseases of three have not been rightly diagnosed!

Good diagnosis presupposes a sound knowledge of Physiology, Pathology, Bacteriology, clinical symptoms and a host of such others including laboratory findings; while good treatment demands a thorough knowledge of medicine and dietetics. Hence, to be a good and scientific Physician, one should acquire a sound knowledge of how to diagnose and then when diagnosed, how to treat the disease. It is, therefore, obvious that diagnosis and treatment go hand in hand and are closely related.

The art of a good physician does not merely consist in diagnosis and treatment, but he should as well take into consideration the possible Prognosis, individual idiosyncrasies, environment, heridity, time, place etc. and unless he pays his attention to all these factors, insignificant as they are, he will prove a failure in his profession, inspite of all his education and skill.

It may be known to our readers that a tug-of-war was going on between the General Medical Council of Great Britain and Indian universities for a pretty long time over the question of recognition of Indian Medical degrees by the former. The controversy was a long one and much was said and done on both sides, The Government of India as also the British Parliament were dragged into the field but no compromise could be effected owing to the adamantine stand taken up by the G. M. C. They diagnosed that medical graduates of an Indian university are dificient in knowledge of the science, specially in that of midwifery and that in order to prove their efficiency, all universities in India should allow a commission appointed by them to inspect the curriculum of medical studies in the latter. This proposal was, however, acceeded to by most of the universities with the result that they were found wanting. Afterwards even the efficiency of their teaching staff was questioned and a commissioner was appointed to judge their qualifications as teachers, which was, no doubt, resented by the universities concerned for reasons quite obvious, as it was considered improbable for one individual, however qualified he may be, to measure the merits of teachers possessing varied and different qualifications.

At this stage, an alternative proposal was made by the Government of India to create an "All India Medical Council" after the model of the General Medical Council and the latter was requested to recognise Indian medical degrees pending its establishment. But that was not to

be and the General Medical Council decided to withdraw its recognition of these degrees.

There is no doubt that the action taken by the G. M. C. was meant for improving the status of medical studies in India and their diagnosis accordingly cannot be questioned. But the line of treatment they took up has proved to have ill suited the Indian universities, especially in the present atmosphere. They did not, while following their line of treatment, take into consideration the constitution of the patient. Where a soothing palliative would have produced a marvellous effect, they thought fit to prescribe a bitter and stimulating drug and the prognosis has been rather unhappy. The Indian doctors are up for retaliation; have ignored the council itself and have boycotted British drugs. They have formed themselves into an Association, are trying to have an "All India, Medical Couucil" of their own and to recognise all foreign medical degrees on the basis of reciprosity as also to enforce knowledge of tropical diseases even on I. M. S. officers recruited in Great Britain.

There is no gainsaying the fact that as a result of this boycotting of British drugs, a considerable loss to this trade has already been recorded and there has been a general dearth of buyers of these drugs in India, so much so, that some houses of proprietory medicines of England are contemplating stopping of advertisements in all Indian papers. Here also the diagnosis and treatment are both wrong and unscientific.

The responsibility for the present depression of drug trate of England in India does not certainly rest with the Indian Press. It is the General Medical Council, or rather its inopportune decision at a wrong moment that is responsible for the whole situation. The proprietors of drug houses of England are also about to follow a wrong course and it may be justly apprehended that by boycotting all Indian papers they will not only cut down the

income of these papers but will themselves be faced with the difficult situation of losing the Indian market altogether, which, in turn, will be captured by other countries of Europe and America.

We know of many British medicinal preparations and foods that are really difficult to be replaced, but if the present state of affairs is allowed to go on indefinitely, we are afraid, these also may be replaced even by inferior stuff.

It is an uncontrovertible fact that the sacred profession of healing is beyond ihe reach of politics and so is also business. It is therefore verv painful to see politics crop up into these lines both in India as also in England and the situation is becoming daily all the more complicated from business point of view.

The solution of the present depression of drug trade of England in India as also the removal of the just grievances of Indian doctors should not be made in the way it is now being done. Much has already been said and done but the situation is gradually becoming worse rather than better, so much so that the wrong line of treatment persisted in by the G. M. C. has almost been able to chalk out the path to ruin for the vast British drug trade. The treatment has proved to be unscientific and ineffectve and it is now time when they should change their prescription, so that the treatment might prove successful. They should meet the just grievances of the Indian doctors just on the line prescribed by the Government which will not only not jeopardise their prestige but will go a great way in reviving the British drug trade in India once again.

The prescription followed by drug-houses should also undergo a thorough change. They should also put pressure on the General Medical Council to come to terms with Indian doctors and themselves approach the latter through the press intensively so that they may recover their lost market before it is too late.

H. N. C.

Original Articles

THE NERVOUS SYSTEM OF THE ANCIENT HINDUS

BY

ASHUTOSH ROY, L.M.S., (Hazaribagh)

(Continued from our last issue)

—:o:—

(3) *The Revd. Mr. Leadbeater's Theory.*

"The force of Kundalini", says Leadbeater, "comes from the laboratory deep down in the earth and is in striking contrast with the force derived from the sun. We draw God's mighty power from both the Earth and the Sun These two forces meet in our body and work together for our evolution. We cannot have one without the other and excess of one produces serious danger" (upsetting of the body equilibrium). It constitutes therefore that form of cosmic energy which is derived from the Earth.

Sir John Woodroffe therefore says that the "Kundalini Shakti" as described by Leadbeater is something different from "Prana" or vital energy (micro-cosmic force in the human organism).

As the sun is ultimately the source of all kinds of energy, Leadbeater's "Kundalini Shakti" means that particular form of cosmic energy derived from the Earth. Just as the sun's rays are modified by passing through the moon, so the sun's rays are modified by passing through the earth.

"This Kundalini force has two aspects", continues Leadbeater, "one benign (constructive) or a lower and gentler manifestation, which is awake within us and doing its appointed work day and night, of which we are quite unaware, while the other a malignant (destructive) or violent and dangerous one, which can be converted into benign (re-constructive) by "Yoga".

Sir John Woodroffe agrees that "Kundalini Shakti" has two aspects, one dynamic which upholds the body as well as its component parts continually working in the body, and the other static, which, when roused by "Yoga", produces "Evolution (destruction of matter with its re-construction into spirit).

(4) The Writer's theory.

"Kundalini Shakti" is that form of cosmic energy, which is regulative (the force of Vayu) residing in dynamic form in the human body (in the Sushamna and corresponds to "Vyan Vayu" of Ayurveda). It has also a static form, roused in "Yoga", resident in the "Muladhar Chakra" which is creative in the sense that it is destructive and re-constructive, known as "Fire" (changes of matter into spirit).

The twofold aspects of Kundalini Shakti.

"Energy", says Sir John Woodroffe, or "Shakti" polarises in two forms, static (potential) and dynamic (active) and "Kundalini Shakti" is no exception to this general rule.

Leadbeater says that Kundalini has two aspects, benign and dynamic, malignant and static, and the latter can be reconverted into the benign form by "Yoga",

We have thus two aspects of this "Shakti", a metaphysical form and a physiological form which is regulative (upholding the body and its components). The former is known as "Fire" and the latter as "Air".

The Metaphysical latent Kundalini Shakti.

"Kundalini Shakti" is a gross form of "Prakriti," the residual power left after the creation of the world, says Sir John.

"Prakriti" (Primordial Energy) becomes dynamic, when it is "Triguna-mayee" (possesses the three gunas, constructive, destructive and regulative) after the world is "created and preserved". She then becomes latent (devoid of the three "Gunas"), and becomes embodied.

She is then the "Shakti" left over after the world is created, a magazine of power to be drawn upon by "Yoga" and utilized for "Laya" or dissolution (Fire).

As Kundalini rises by successive stages along the "Chakras" (subtle centres in the Sushamna) these are conquered, that is the force of each Chakra becomes latent, till when the "Agna-chakra" is reached, the body passes into the stage of "Samadhi" (suspension of animation) when the "air" is extinguished and the "fire" is lighted.

The physiologically active or dynamic "Kundalini Shakti."

This is the lower and gentler manifestation of the force of Leadbeater, "which is awoke within us and doing its appointed

beneficial work day and night of which we are quite unconscious", (Vayu force).

"Kundalini" is thus defined as the "Supreme Shakti" which maintains all breathing creatures. Construction and destruction are going on side by side both in the Macro-cosmic and the micro-cosmic world (the living organism) and "Kundalini" is the force which regulates these two opposing forces of construction and destruction, preserving the organic body (Vayu).

Hence "Kundalini" is described as the "Supreme Shakti" in the human body, embodying all powers and assuming all forms". That is, it is the chief force, which controls the various processes of anabolism (construction) and katabolism (destruction). Note that (Pitta and Kapha are "Pangu" inactive and Vayu moves them, according to Ayurveda.

Katabolism (Pitta of Ayurveda) is associated with the sympathetic and anabolism (Kapha of Ayurveda) is associated with the Para-sympathetic. "Kundalini" is the force of "Vayu" (Sushamna force) which regulates and controls these two autonymic forces of the autonymic system.

"Kundalini Shakti" is thus the "static shakti" of the whole body as well as of its different components which upholds them.

The Static centres of the body are those found in the spinal cord and "Kundalini" is the force of these eentres. "Kundalini" in "Muladhar" is gross Shakti, in the Agna-chakra is subtle shakti (acting on the mental and Psychic sphere) and in the "Shahasrar" brain it is spiritual Shakti.

Particular forms of "Kundalini Shakti" exists in the dynamic form in particular "chakras", all such energies existing in magnified form in the "Sahasrar."

"Kundalini Shakti" is thus the sum total of the forces of the principal centres in the brain as well as subsidiary centres in the spinal cord

Thus the micro-cosmic nerve forces of the cerebro-spinal system in the various Chakras are as follows :—

Muladhar	Dakini	acts and reacts against	Earth
Svadhisthan	Rakini	,,	Water
Manipur	Lakini	,,	Fire
Anahata	Kakini	,,	Air
Vishuddha	Rakini	,,	Ether
Agna	Hakini	,,	Mind
Sahasrar	Yaskhini	,,	Soul

All these are different forms or manifestations of "Kundalini". Thus Kundalini in the lower Chakras represent gross or physical force or Vayu in the Agna-Chakra mental or Psychic force fire and in the Sahasrar spiritul force.

We can now understand that "Kundalini force" is the cosmic force modified by passing through the Earth (against our surroundings, for Earth in the Hindu sense means "Kshiti, Ap, Tej, Maruta and Byoma"). Hence Leadbeater says that the dynamic form of "Kundalini" acting in our body, preserves it from adverse forces coming from our environments, through the cerebro-spinal system.

According to the ancient Hindus, cosmic force acting on our body may be resolved into 3 kinds of forces :—

(a) from the sun acting through Pingala (Sympathetic).
(b) from the moon " " Ida (Para-sympathetic)
(c) from the earth " " Sushamna (Sp. cord).

Creative (anabolism) function of Kapha (Para-sympathetic).
Dissolutive (katabolism) of Pitta (Sympathetic).
Preservative of Vayu (Sp. cord).

Except Vyan Vayu which exists throughout the body acting and re-actiang against our surroundings, all other Vayus are associated with organic action and are thus the force of the sympathetic system. Vyan Vayu is the force of the cerebro-spinal system.

"Kundalini shakti" or the force of reflex centres in the Sushamna are ordinarily latent, but is roused to activity ordinarily, when there is any necessity for spinal reflex action, to preserve the body and keep it healthy.

Particular forms of "Kundalini shakti" are said to reside in particular Chakras (subtle centres in the spine as Vayu ; all such existing in magnified form in the "Sahasrar" as Fire).

When a Yogi can 'fix his sun and moon" (Pingala and Ida) so that they are confined or cease to act, being neutralized (organic action stops and the state of "Samadhi" is attained), Kundalini wakes up. That is, when both branches of the involuntary autonymic system of Nerves are voluntarily controlled, the latent or static Kundalini is aroused and the Yogi passes into the state of "Samadhi".

Sushamna head-end latent Kundalini roused by Yoga-force called fire (higher and more powerful).

[illegible]

(i) The Chakras in the Brain

There may be divided into 3 groups [illegible] in the cranium as follows :—

(i) *Lower Brain or Head End of the [illegible]*

Here we find the following structures from below up :

(a) Twelve-petalled lobe—medula and [illegible] 4th ventricle) from which arise the 12 cranial [illegible].

(b) A-ka tha triangle in the 4th ventricle.

(c) Hangsa—the Pineal gland

(d) Manipitha—The velum interpositum.

(e) The Guru or Fornix, resting his two legs on the basal ganglia, forming

(f) The Kama-kala triangle—3rd ventricle.

(ii) *Mid-brain*—There are two Chakras.

(a) Surjya mandal—corpus striatum } Basal Ganglia.
(b) Chandra Mandal—optic thalamus }

Inside Chandra Mandal are found the following structures :—

(1) Chandra-kala or Am-kala, choroid plexus, secreting Nectar (cerebro-spinal fluid).

(2) Within is Nirban-kala, the seat of Nirvan shakti (force of salvation).

(3) Within is Para-Bindu, the place of union or Shiva-Shakti or Prakriti-purusha.

(4) Within is the void-O-Shivasthan or Kailash—the seat of Devata (cosmic soul).

(5) Below Nirban-kala is "Nibodhika"—the region of fire which induces Laya or dissolution.

(iii) *Upper Brain*—Chakras from below up and above Chandra Mandal.

(a) Maha-Nada—Internal capsule, the place of dissolution of Vayu.

(b) Brahma-randhra—Foramen of Monroe.

(c) Maha-Shankhini—Auditary area in the posterior part of the upper temporal convolution.

(d) Manas chakra—sensorium.

(e) Sahasrar—motor area.

(*f*) Visarga—The great void—the silent area of the brain.

Detailed anatomy and physiology of the Chakras (stuctures) inside the bony cranium.

(1) *Chakras in lower brain.*

These consist of the following structures situated from below up as follows :—

(*a*) The 12-petalled lobe
(*b*) The a-ka-tha triangle and (lower) Hangsha.
(*c*) The three lines forming the "lower Kamakala triangle of Yamala" on which is seated on the (lower) Manipitha the Hangsha (upper)
(*d*) The three lines forming the higher Kamakala triangle on which is seated over the Manipitha the Guru.

These correspond to as follows :—

The 12-petalled lobe—medulla pons or the head-end of the Sushamna.
The a-ka-tha triangle—the lower triangle of the floor of 4th ventricle.
The lower Hangsha—Resp. centre in medulla.
The three lines—Ida, Pingala and Sushamna.
The lower Kamakala—upper portion of the floor of 4th ventricle.
The three Bindus (lower) a-ka-tha.
The lower Manipitha on which is situated the upper Hangsha.
The Pineal, the seat of individual soul.

The three lines—Rudra, Brahma and Bishnu lines:—The three bindus (upper) Nates, Tastes and Pineal, Kamakala triangle = 3rd ventricle, Manipitha—velum interpositum, Guru—fornix.

(a) *The twelve-petalled lobe.*

It had been described as "within the womb and inseparable from the lotus, in which is situated the Brahma-randhra and which is adorned by the channel of Kundalini".

This corresponds to the floor of the 4th ventricle in the medulla oblongata and the posterior or dorsal aspect of the pons, both of which together form the head-end of Sushamna.

These are composed of grey matter continuous with the "Bajra" fibres of the Sushamna". It is called the 12-patalled lobe, as from it issue 12 cranial nerves.

It is situated in the [illegible] lotus (medulla oblongata and [illegible] is situated the "Brahmarandhra" (lit. the canal of Brahma) [illegible] upward prolongation of the central canal of the spinal cord.

It is adorned by the channel of Kundalini or the canal through which "Kundalini" passes in its upward course, when excited or aroused.

Thus the 12-petalled lotus corresponds to the medulla oblongata and the pons, which together form the head-end of the Sushamna.

(b) *The a-ka-tha triangle and the lower Hangsha.*

In the 12 petalled lobe is the "Yoni mondal" or the triangular area, the abode of "shakti" where the two pericarps meet. It is formed by the three lines, which give it the character of a mondal. Its apices are formed by three "vindus", the sun, moon and the fire.

Yamala has confused the "a-ka-tha" triangle with the "kama kala" triangle, which is situated above it. The Hangsha is situated in this triangle.

The a-ka-tha triangle corresponds to the lower triangular area of the 4th ventricle, situated in the 12 petalled lobe. It is the abode of "shakti" (force) *i.e* force centres are located here.

It is situated where the two pericarps (the two halves of the Sushamna) meet. It is formed by the three lines or three groups of fibres, Ida (moon), Pingala (sun) and Sushamna (fire), which give it the character of a mondal (enclosed area).

The apices of the triangle are formed by the three "vindus" (lit. dots) corresponding to sun, moon and fire. That is, the fibres from Ida, Pingala and Sushamna are located here.

Fire represents the regulating force at the head-end of the Sushamna, the sun and moon representing Ida and Pingala.

In the spinal cord (Sushamna proper), the regulating force is known as "Vayu" or "Vyan Vayu". In the head-end of the Sushamna inside the cranium, the force is more subtle and called "fire."

It is called the abode of "shakti" (force). The centres for Ida and Pingala (Sajous's sympathetic centre in the medulla oblongata) are located here.

The (lower) "Hangsha" is located here. It corresponds to the respiratory centre (situated at the tip of the calamus scrip-

torious at the lower angle of the 4th ventricle). That is, the sympathetic and the respiratory centres (shakti) are located here.

The word "Hangsha" is composed of two Sanskrit letters "Hang" and "sha" which are the sounds which issue, when "pranayam" (respiratory exercise) is practised, the inspiratory sound being "Hang" and the expiratory, "Sha". In other words, the respiratory process being two-fold, the centre is also two-fold. (This two-fold aspect of respiratory centre, one inspiratory and the oher expiratory, is recognized in modern physiology).

It is now the "kama-kala" triangle of yamala as stated by Kali Charan, the able commentator of *Paduka panchakam* which will be dicussed presently.

(c) *The kama-kala triangle and Hangsha with the three lines.*

The kama-kala triangle is the lower one of yamala situated like the a ka-tha triangle in the 12 petalled lobe, with which it is often confused. It is the upper triangle of the floor of the 4th ventricle.

The floor of the 4th ventricle is lozenze-shaped and if we divide it at the middle, it consists of two triangles, the upper one being yamala's "kamakala" and the lower one the a-ka-tha triangle.

Its abices are formed by the three "vindus" (dots), moon, sun and fire, Brahma vindu, Vishnu vindu, and Rudra vindu, which correspond to the "Nates and Testes" of corpora quadragemina, while the third "vindu" to the Pineal gland.

It is formed by three lines, the lines of moon, sun and fire, the fibres of Ida, Pingala and Sushamna. It corresponds to the triangular area between the Nates and Testes forming its base and the Pineal its apex.

Here is seated the "Hangsha" (upper Hangsha, for we have two Hangshas, upper and lower) over the "manipitha" (Jewelled altar, the middle manipitha, the lower one being situated in the Heart). It corresponds to the cardiac centre in the medulla.

It is considered as the seat of individual soul (micro-cosmic soul of intellectual people). It is closely connected with the "soul", also located in the Heart. That is, it is the cardiac centre in the Brain. It is the seat of Shakti-Siva or Prakriti and Purush.

The pineal gland is the seat of soul of Descartes, while the heart is the seat of soul of Aristotle. The "soul" in the heart (Jivatma) travels to the brain (Paramatma) says Ranade. The

[illegible]

[illegible] the Almighty, so that the [illegible] with the cosmic soul (God). This is "Yoga" [illegible] man and the divine.

Indirect proof of the function of the Pineal (where prakriti and purush unite) from a metaphysical point of view we find in Endocrinology as follows:—

Frankl Hachwart (quoted in Barker's system of Endocrinology and Metabolism) reports a case of pineal tumour in a boy, aged 5 years, who "spent much time in discussing the immortality of the soul and the life after death," adding that these ideas, and subjects were not suggested to him by any one.

Of course this is pathological, but a physiological enlargement may be conceived as the result of successful "yoga" practice, in which the brain sands accumulate and form a large concretion (as believed by yogis) helping the yogi in clarifying his highly metaphysical speculation.

The "Hangsha" (Pineal gland) is described as seated in the triangle over "manipitha" which is between "Nada and Bindu".

The "Nada and Bindu" are the nates and testes between which is spread the "Manipitha" which is a re-duplication of piameter from the under surface of the velum interpositum, which keeps the pineal in position between the Nates and the Testes.

(a) *The kama-kala triangle with manipitha and Guru seated on it.*

This "kama-kala" triangle is the higher triangle in the brain and corresponds to the 3rd ventricle. It is therefore not the "kama-kala triangle" of Yamala.

It is formed by the three lines (bundles of fibres) : the Rudra line from the Rudra Vindu, the Brahma line from the Brahma Vindu and Vishnu line from the Vishnu Bindu. These lines therefore emanate from the Pineal, the Nates and the Testes.

(*To be continued*).

THE PULSE IN PROGNOSIS
ACCORDING TO AYURVEDIC MEDICINE

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This last portion of the science of Sphygmology is highly interesting and bears highest testimony to the keen power of observation of the Ayurvedic physicians of the bygone days. However empirical they may be considered by the modern physician, there is a good deal of practical importance in the facts incorporated here and derived from actual observations.

The subject may be dealt with under three headings : (I) Pulse conditions indicating a favourable prognosis, (II) Pulse conditions indicating an unfavourable prognosis. (Here may also be considered a group of cases where the pulse conditions, seemingly unfavourable, do not indicate any unfavourable prognosis) and (III) Pulse conditions revealing the time of death.

(I) Pulse conditions indicatiug a favourable prognosis. A number of pulse condictions has been described which do not indicate any unfavourable prognosis.

(1) स्पन्दते चैकमानेन विंशद्वारं यदा धरा ।
स्वस्थानेन तदा न्यूनं रोगी जीवति नान्यथा ॥ II. 8 ; II. 29.

If the pulse beats uniformly (i.e., with regularity in rhythm and equality in strength and volume) for 30 times in its own place (that is, at the wrist), the patient is sure to live without doubt.

(2) अङ्गुष्ठाद् ऊर्द्ध्वसंलग्ना समा च वहते यदि ।
निर्दोषा सा च विज्ञेया..... ॥ II. 20.

If the pulse beats uniformly at the root of the thumb, it indicates no defect.

(3) नविमुञ्चति स्वस्थानं नाडी सूक्ष्माविभाव्यते ।
तस्यमन्नुभयं नास्ति व्याधिरप्य पशाम्यति ॥ III. 2.

If the pulse is not displaced from its own site and seems to be slender (perhaps indicating a normal condition), there is no fear of his death and the disease will also go away.

(4) यदायं धातुमाप्नोति तदा नाडी तथा गति ।
तथादि सुख साध्यत्वं.....॥ II. 38

If the pulse characters correspond to the physiological variations (of *Vayu, Pitta and Kapha*), then the prognosis is good.

The following passage is more clear—

लावकी वदते नाडी पित्ताद्दे सौख्यदायिनी ।
राजहंस मयुराद्यं कफाद्दे सौख्यदायकं ॥ III. 2.

If the pulse beats like the progression of a quail at the site of the *Pitta* (perhaps also at the period when it predominates), it indicates good health. (Likewise) If the pulse beats like the progression of a goose, peafowl and others at the site of the *Kapha* (perhaps also at the period when it predominates), it indicates good health.

(5) जलचरी वदते नाडी साध्यं भवति नान्यथा ।

If the pulse beats like the progression of an aquatic animal (evidently fish), the condition is favourable and not otherwise. The curve produced by the movement of fish in water is more or less wavy and may be likened to a normal pulse excursion.

(6) In addition to the pulse conditions, we have in II. 37 a number of passages which depict a number of general bodily conditions which indicate a favourable prognosis.

करपादौ भवेदुष्णं स्वेदं स्वल्पता तथा ।
जिह्वाकोमलतां याति स रोगी न विनश्यति ॥
स्वेदहीनो ज्वरी यस्य नासाश्वासो विमुञ्चति ।
कण्ठेऽपिकफहीनस्तु स रोगी न विनश्यति ॥
निद्रामौख्यं भवेद् यस्य शरीरे न वसस्तथा ।
इन्द्रियानि प्रसन्नानि सरोगीन विनश्यति ॥
चैतन्यं सकलं यस्य अङ्गस्फाटस्फुटं भवेत ।
कण्ठे ज्वरितकं यस्य जीवितं नात्रसंशयः ॥ II. 37.

If the hand and feet are warm, there is slight perspiration and the tongue is soft (that is, can be easily protruded when asked to do so), the patient is not going to die.

If there is no perspiration in fever, the patient breathes through the nose and the throat is without mucus, the patient is not going to die.

If there is good sleep, no sickness in the body and the senses are in good condition, the patient is not going to die.

The patient, all the senses of whom are in good order, the body is pliable (that is, not rough and dry) and there is feverishness (warmth) in the throat, is not going to die.

If the senses are in good cond tion, the mind in a natural state and the body is perfect, the patient is not going to die.

(II) PULSE CONDITIONS WITH UNFAVOURABLE PROGNOSIS: A large number of pulse characters have been recorded in various treatises. In most cases the condition is pronounced as incurable.

A. A number of pulse conditions have been mentioned severally so as to give a general idea of the bad condition.

चाञ्चल्यदीप्पूर्णत्वं काठिन्यमतिमन्दता ।
वक्रत्वमतिसूक्ष्मत्वं स्वस्थानस्य विमोचनं ॥
सौमित्यं गतिकौटिल्यं सर्व्वेषां दुष्टलक्षणं ॥ II. 4 ; II. 36.

The following pulse conditions are indicative of bad prognosis: (1) Rapidity of the pulse; (2) Hardness (this indicates that the pulse is felt between the beats); (3) Extreme slowness of the pulse (this probably corresponds to the "heart block" of the modern medicine; (4) Crookedness of the pulse. This indicates high tension pulse; (5) Extreme smallness This evidently refers to a 'running pulse". Thus Greene (Medical Diagnosis, p. 473) notes: "An excessively weak, thready, rapid 'running' pulse associated with marked cardiac weakness is a forerunner of death in certain diseases and may represent auricular flutter or alternation"; (6) Displacement of the pulse from its normal site; (7) Imperceptibility of the pulse. This seems to be a "formicant" pulse—a small, nearly imperceptible pulse; (8) Irregularity of the rhythm. Besides the varying interval between the successive beats, an inequality in the strength of the beats may be meant by the term.

B We now come to an unfavourable prognosis mentioned by a single sign in the pulse condition.

(a) Displacement of the pulse.

1. हन्ति च स्थानविच्युता । II. 38.

The pulse displaced from its natural position indicates death. This condition was really grave in days when saline injection (subcutaneous or intravenous) or blood tranfusion was unknown in medicine.

2. क्रमेन त्यजति स्थानं या नाडी सा च मृत्यवे । II. 38.

The pulse which gradually leaves its natural position means death.

(*b*) Extreme slowness of the pulse.

स्थित्वा स्थित्वा गतिं याति सा नाडी मृत्युदायिनी । II. 20.

स्थित्वा स्थित्वा चलति या सा ज्ञेया जीवनाशिनी

I. 1 ; II. 4 ; II. 29

Similar other passages in I. 1 ; II. 34 ; etc.

The pulse which beats slowly indicates death. Here we are dealing with an extremely slow pulse—a complete heart block, which really has a very unfavourable outlook. Thus Lewis (Modern Medicine by Osler and McCrae, vol. iv, p. 100) says : "Regarded in its entirity, persistent heart block of high grade is a grave condition."

(*c*) Extreme softness of the pulse.

अतिशीता च या नाडी सा ज्ञेया प्राणहारिणी । II. 20.

The pulse which is very soft (nearly imperceptible) indicates death. It shows both myocardiac failure and vasomotor paresis.

त्रिदोषे स्पन्दते नाडी मृत्युकालेऽपि निश्चला

In case of a triple derangement, the pulse becomes imperceptible at the time of death.

गम्भीराया भवेन्नाडी तावदेन्नाशवाहिनी । II. 8.

If the pulse be deep-seated that is, scarcely perceptible), it indicates death.

(*d*) The arrhythmia of the pulse.

स्कन्दे च वहदे नित्यं पुनर्नगतिचाङ्गुलौ ।

असाध्या सा विनिर्दिष्टा नाडी दूरे विवर्जयेत् ॥

II 1 ; II. 34 ; II. 27 ; II. 36.

If the pulse beats in the wrist and then again has no movement beneath the (examining) fingers, the condition of the patient should be considered hopeless.

या विदाय स्वकं स्थानं पुनरेति प्रयाति च ।

सापि मृत्युकरी नाडी नात्रकार्यं विचारणा ॥ II. 36.

If the pulse leaves its (normal) site and again comes there, such a pulse indicates death without any hesitation.

Both the passages indicating the same condition indicate an intermittent pulse. Now-a-days we donot take such a view in all cases of intermittency. Here we are dealing with one where we miss several beats successively at a time and this certainly refers to an advanced stage of cardiac failure.

दुःखतः षट्कोनाडी साध्यं भवति वैद्यकं । III २.

The pulse beating like the progression of a sparrow (that is, which beats quickly and by jumps for a number of times and then stops beating for a while) indicates a condition curable with difficulty. Here we are dealing with a case of intermittent pulse. We know of a pulse-condition known as the *goat-leap* pulse (See Dorland's Medical Dict.) which is defined as an irregular and bounding pulse.

(*e*) The Running pulse.

नाडी तीव्रगतिर्यस्य असाध्य परिकीर्त्तितः । II. 37.

If the pulse beats with extreme rapidity, this indicates a hopeless condition.

(*f*) The disappearance of the pulse.

न विद्यते यस्य नाडी तस्य संशय जीवनं । II. 4.

If there is no pulse, there is a great doubt for the life. We should remember that we are speaking of days when intravenous saline injection or blood transfusion was not known.

(*g*) कफपुरित कण्ठास्तु तस्य मृत्युर्नसंशयः ॥ II. 37.

If there is accumulation of mucous in the throat (that is, when rattling has appeared) there is no doubt of his death.

(*h*) ऊर्द्ध्वश्वासी न जीवेच्च न जीवेत् वृषभस्वरः ।
भग्ननासो न जीवेच्च वस्तिशोथी न जीवति ॥
तथाकृति छिन्ननेत्रो न जीवेद्विकलेन्द्रियः ॥ II. 4.

One with hard breathing, or having the voice of a bull, or with a bent nose, or having oedema of the perineal region, or having opaque eyes (cornea) or with depressed senses never lives. Although not connected with pulse, they are placed here for convenience.

C. We now consider the unfavourable prognosis indicated by two signs.

(*a*) अतिक्षीणा[1] च शीता[2] च जीवितं हन्ति निश्चितं ।
I. 2 ; II. 1 ; II 31 ; II. 34 ([2]अतिशीता) ;
II. 29 ; II 4 ; I: 1 ([1]शीर्णा)

If the pulse is very weak (thready) and is very soft (scarcely perceptible), it indicates death. The pulse may correspond to a *thready pulse* (one that is very fine and scarcely perceptible) or to a *shabby pulse* (a peculiar, feeble and ill-defined pulse due to a weak heart and relaxed vascular tension).

(b) स्थिरा शीता चलति या सा मृत्युं प्रावलाशिनी। II 31.

If the pulse is tranquil (that is, nearly imperceptible—perhaps indicating extreme slowness) and is very soft (low), it indicates death.

(c) या मन्दाशिथिला नाडी मानवं हन्ति साहसं। II. 4.

If the pulse is slow and soft, it soon kills the patient. The condition is perhaps made to indicate an acute parenchymatous myocarditis in connection with the typhoid fever which is prevalent in India from ancient times.

(d) अति तीक्ष्णा च शीता च जीवितं हन्त्यसंशयं॥ II. 4.

If the pulse is very fine (that is, the individual beats are very small—indicating auricular fibrillation) and is very soft (nearly imperceptible), it indicates death.

(e) यासूक्ष्मा च वक्रा च तामसाध्यम् विनिर्दिशेत्। III. 2.

अतिसूक्ष्मा च कुटिला नाडी वहति मृत्यवे॥ II. 8.

The pulse, which is fine (thready with small beats) and crooked (that is, with a very low curved ascent), indicates death.

(f) अतिसूक्ष्मातिवेगा वा शीतला च भवेद् यदि।

तदा वैद्यो विजानीयाद् अयं रोगी विनश्यति॥ II. 41; II. 29.

If the pulse is very fine (that is, the beats are minute) and is very quick or very soft (that is, scarcely perceptible) then the physician should know that the patient will die.

(g) स्थिला स्थिला चलेद् या सा हन्ति स्थानच्युता तथा। I. 2.

If the pulse beats very slowly and becomes displaced from the normal site, it indicates death. This seems to be the terminal sign of the typhoid fever.

(h) नाडी मध्यवहाङ्गुष्ठमूले सानर्थसूत्सृजेत्।

शनैरुद्धतगामिनी मृत्युं सा च प्रकाशते॥ II. 4; II. 14; II. 34.

If the pulse, beating with moderate rate at the base of the thumb, unfortunately leaves the site and slowly becomes forcible it indicates death.

(i) स्वस्थानविच्युता नाडी यदा वहति वा न वा।

ज्वाला च हृदये तीव्रा तदा ज्वालावधिस्थिति॥

II. 4; II. 36; II, 38; II. 41.

If the pulse, displaced from its site, be felt or not and if there is severe pain in the heart, the life exists so long as the pain is there.

(*j*) शीतलं हृदयं नासा उरु पादौ च शीतलौ।
नाडी वेगवती क्षीणा क्षणमेकं न जीवति ॥ II. 17.

If the chest, nose, thigh and legs are cold and the pulse is very quick and fine (thready), the patient will not live for a moment.

(*k*) विद्युद्वद् नामिता नाडी दृश्यते च न दृश्यते।
अकाले विद्युत् पातेन स गच्छेत् यमसदनं ॥ II 29.

If the pulse goes down like a flash of lightning and is felt at one moment and not at another, the patient dies as if struck by lightning.

(*l*) कम्पते स्पन्दतेऽत्यन्तं [तन्तुवत्] पुनः स्पृशति चाङ्गुलं।
तामसाध्यं विजानीयान्नाडी दूरेण वर्ज्जयेत् ॥

If the pulse is trembling (tremulous) and beats very quickly (or thread-like) and again strikes the finger, there is no hope for the life of the patient. This is evidently a case of auricular fibrillation. Thus Vickery (in Sajous's Cyclopaedia of Practical Medicine, Vol. V. p. 235) notes: "Auricular fibrillation.... The radial artery supplies indifferent news of the ventricular rate; many pulsations fail to reach it. The pulse is a medley of beats of many sizes and intimately mingling of changing pauses; now the beats are almost uniform in strength and spacing, now feeble pulsations chase along rapidly; now the pulse is lost, now it returns with increased vigour."

(*m*) कालक्रमादतिकृशो बलहीनो न जीवति। II. 4.

If the pulse gradually becomes very slender (very small) and feeble (forceless), the patient does not live. The condition evidently refers to a gradual heart failure.

(*n*) वामनाडी वहेत् सत्यं यदि स्यात् कु(म)ण्डलाकृति।
मृत्युं शीघ्रं विजानीयात् यदि शक्रं समा भवेत् ॥ II. 4.

If the left pulse (pulse on the left hand) beats really in a curved manner and if it is like Sakra (that is, strong like Indra—hard and forcible), the death is to be considered to take place soon. The passage no doubt refers to a high tension pulse (pulsus durus—"tense, hard, non-compressible pulse of hypertension", DaCosta. Physical Diagnosis, p. 323) attended with high blood pressure (Hyperpiesia). The sphygmographic tracing of such a pulse agrees closely with the description in the passage. The latest researches on Hyperpiesia prove the gravity of such cases. Thus we find in "Hyperpiesia and Hyperpiesis" by H. B. Shaw (Oxford

Medical Publication, 1922, p. 77), that the intervals which elapsed between the onset of symptoms and death were one year or less in 73% of cases of hyperpiesia. That the death is drawing near is no doubt to be taken in a comparative way with reference to the long life the man of the past used to enjoy. Lastly the "left side" probably refers to the direct origin of the left subclarian artery from the arch of the aorta and hence to the fact that the force is to be more strongly felt on that side. Usually there is no sharp difference of blood pressure between the two sides.

(*o*) वहिः शीतोऽन्तरे दग्धो न जीवति स मानवः। II. 4.

If there is coldness on the body surface and burning pain inside, the man will not live.

D. Unfavourable Prognosis recorded by three signs.

(*a*) अतिशीतातिचीणा च चपला चपला मति। II. 42.

अतिसूक्ष्मा च वेगाच्च शीतला वहते यदि।

तदा वैद्य निजानीयात् तां आयुं गलितं भृशं॥ III. 2.

The extremely soft (that is, nearly imperceptible), very slender (fine) and quick (running) pulse is for rapid death.

(*b*) यात्यन्तमस्थिरात्यन्तं यावै वा मांसमचिणी।

या च सूक्ष्मा च वक्रा च तामसाध्यं विनिर्दिशेत्॥ III. 2.

The pulse, which is very quick (that is, running) or very deep-seated in the flesh (that is, nearly imperceptible) and is fine (thready) and curved (that is, very soft) indicates death. The signs indicate a thready or filiform pulse.

(*c*) दृश्यते चरणे नाडी करेनैवदृश्यते।

मुखं विकसितं यस्य जीवितं तस्यदुर्लभं॥ II 29; II. 41.

If the pulse is felt in the leg, but not in the wrist and there is an anxious look, (with cyanosis ?), there is little hope of his life. The passage is obscure and cannot be well interpreted in the light of Modern Medicine. Perhaps such a condition refers to some intrathoracic tumour, pressing on the subclarian artery and the innominate vein.

(*d*) महादाहेऽपि शीतत्वं शीतत्वे तापिताशिरा।

नानाविधागतिर्यस्य तस्य मृत्यु न संशयः॥

II. 4; II. 36; II. 30; II. 41.

If the pulse becomes soft in high fever and it becomes hard (forcible) in a cold body and if the pulse beats irregularly, there is no doubt of his death.

(e) कदाचिन्मन्द गमना कदाचिद्गमनाकिनी ।
त्रिदोष कोपतो ज्ञेया हन्ति सा ध्यानचिन्तया ॥

II. 4 ; II. 34 ; II 36.

If the pulse is slow at one time and quick at another, it indicates triple derangement ; and if the pulse is displaced from its normal place it means death.

(f) हिमवती यदा नाडी ज्वरदाहेन पीडिता ।
त्रिदोषकोपतः यात्रा तन्द्रा मृत्युं समादिशेत् ॥ II. 36.

If the pulse is very soft in a patient with high fever, it indicates triple derangment ; if the patient becomes drowsy (comatose), it means death.

(g) तन्तुकी मण्डुकी हंसी क्षणमात्रेण वेगिनी ।
ज्वरति मासमात्रन्तु त्रिदोषे नैव जीवति ॥

If the pulse beats like the progression of a frog (that is, is jumping—beats with celerity) at one time and like that of a goose (that is, becomes slow with a low rise) at another and then becomes rapid for a moment, and if the patient is suffering from fever for a month due to triple derangement, there is no hope of life. The condition evidently refers to some acute infectious disease (probably typhoid fever) going to terminate fatally.

(h) वायुःपित्ताशयं याति पित्तं याति कफालयं ।
कफो वा कण्ठमायाति जीवितं तस्य दुर्लभं ॥ II. 4 ; II. 36.
अनीलो याति पित्तस्य पित्तंयाति कफालयं ।
कफस्य कण्ठमालयं ॥ II 16 ; II. 37.

If the *vayu* comes to the place of *pitta* and *pitta* to the place of *kapha* and *kapha* (mucus) comes to the throat, then the patient is going to die. The sense of the passage is obscure. Perhaps a triple derangement with collection of mucus at the last stage is indicated.

(i) जिह्वा कृष्णा भवेद यस्य मुखं वै कृष्णसप्रभ ।
त्रिदोष लक्षणं यस्य तस्यमृत्यु न संशय ॥ II 37.

If the tongue is black (cyanosed) and the face is cyanosed and there is triple derangement then the patient is going to die.

E. Passages describing unfavourable prognosis by four or five signs.

(a) यात्यन्तमस्थिरात्यन्तं यावे वा मांस भक्षिणी ।
याच सूक्ष्मा च वक्रा च तामसाध्याम् विनिर्दिशेत् ॥ II. 34.

If the pulse is very rapid (running) or is very deep-seated (that is, nearly imperceptible) and if it is fine (thready) and curved (that is, scarcely rising), it indicates death.

(*b*) तिर्यगूर्ध्वा च या नाडी सर्पवद्वेगवत्तरा ।
कफपूरितकण्ठस्य जीवितं तस्य दुर्लभं ॥ II. 4 ; II. 29.

If the pulse is rising obliquely and if it is frequent like (the progression of) a snake and if mucus collects in the throat, there is no hope of life.

(*c*) यात्युच्चका स्थिरात्यन्तं यात्रेयं मांसवाहिनी ।
या च सूक्ष्मा च वक्रा च तामसाध्यां विनिर्दिशेत् ॥
II. 4 ; II. 17 ; II. 26 ; II. 36 ; II. 31.

If the pulse beats with a sharp rise, is very slow and deep-seated and if it is fine and crooked (with low rise), there is no hope of life. The condition set forth is one of complete heart block in an advanced stage.

(*d*) त्वगूर्द्ध्वं दृश्यते नाडी प्रवहेदतिचञ्चला ।
असाध्यलक्षणा प्रोक्ता पिच्छिला चाति चञ्चला ॥ II. 20.

If the pulse is seen rising up from beneath the skin, if it is very slippery (that is, slips beneath the examining fingers) it indicates unfavourable prognosis. It refers to an advanced arterio-sclerosis with hard, rapid, incompressible pulse.

(*e*) क्वचिन्मन्दां क्वचित्तीव्रां त्रुटितां वहतेक्वचित् । II. 20.
क्वचित् सूक्ष्मां क्वचित् स्थूलां नव्य साध्य गते गतिं ॥

If the pulse is slow at one time, frequent at another and is missed at times and if it is fine at one time and large at another, there is no hope of life. This refers to a case of fully developed auricular fibrillation.

(*f*) व्याकुला शिथिला मन्दा स्थित्वा स्थित्वा प्रयातिया ।
क्रमेण त्यजतिस्थानं या नाडी सातुमृत्यवे ॥ II. 36.

If the pulse is agitated (that is, the beats are not uniform), very soft and slow, the beats are separated by long gaps and if the pulse gradually leaves its normal site, it indicates death. This refers to a terminal auricular fibrillation.

(*To be continued.*)

KHARPAR, A ZINC MINERAL

BY

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There is a mineral called Rasak or Kharpar, the use of which is mentioned in the Ayurvedic rasayanic treatises. This is a mineral of the metal Zinc. There is mention of three kinds of this mineral in the Rasarnava, the oldest rasayanik treatise according to Sir P. C. Roy, the two of which, called karvelak and Dardur, are of greater practical importance. Dardur is chiefly used for the extraction of the metal zinc from it. Karvelak is used in the preparation of Ayurvedic medicines to be used both internally and externally.

The chief use of Karvelak lies in the preparation of the well-known medecine, Vasanta-Malati used in the case of low vitality, specially in the first stage of Phthisis and of long standing slow fever.

This mineral, Karvelak, was not found occurring any where in India and was therefore obtained from foreign countries, cheifly from China in the olden days. The supply of this mineral was, on account of some reason or another, stopped and owing to the non-availability of this mineral, the Ayurvedic practitioners began to use the *bhasma* of zinc in its place. This bhasma of zinc was in course of time found not to be efficacious at all for those diseases for which Kharpar was used. This led Bang Sen to prepare an artificial Kharpar which he named Kharpar rasayan which is still used by the learned Kavirajes, specially in Bengal. The method of preparing this Kharpar rasayan is complicated and troublesome on account of which this could not be prepared by everybody. This led to the introduction of other preparations into the market which began to be used by ordinary Vaidyas in stead of Kharpar rasayan.

From the chemical examination of the various samples, sold in the maket under the name of Kharpar, it appears that these substances do not at all contain the ingredients which ought to be present in a sample of genuine Kharpar. Substances ordinarily sold in the market under this name are Calamina piperata from England, Calamina piperata from Germany, Sang Basari from

Persia, Mritika Kharpar from Surat (Gujerat). Calamina piperata from England has not been found to contain any zinc at all. It is mostly calcium carbonate with some colouring matter. Sang Basari also does not contain any zinc nor is there any zinc in the Mritika Kharpar from Surat. It it therefore clear that these materials should never be used in place of Kharpar. Calamina piperata from Germany contains some zinc in the form of sulphides, carbonates and silicates.

The sample obtained from America, called Villamite, has been found to conform to the properties of Karvelak mentioned in the Ayurveda and it is gratifying to note that All India Rasayan Sambhasha Parishad, held at Karachi, this year, has accepted this American sample alone as the genuine Kharpar to be used in the Ayurvedic preparations. I hope all interested in the preparation of the Ayurvedic medicines will take note of this and use this particular mineral alone in their preparations, specially of Basanta Malati which is really a medicine prepared from red sulphide of mercury, gold, pearl, karvelak (kharpar) etc. We have got some stock of this mineral in the Ayurvedic Department of the Benares Hindu University and can spare on a reasonable price for experimental purpose for testing the efficacy of the mineral in the preparations of the Ayurvedic medicines.

Health and Hygiene

A CHILDREN'S DISEASE

Rickets And Its Treatment

Rickets, which is essentially a disease of childhood makes its first appearance when the child begins to walk, about the eighteenth month after birth. It may come on in any of the earlier years of childhood, but it never occurs after twelve years of age. It is particularly the children of old or feeble parents, or the later children of a large family, and the children of the poor, ill-fed, and living in small, badly aired, and ill-lighted houses that are most liable to the disease. Its causes are thus either inherited feeble constitution, or an inherited constitution actually scrofulous, and bad and insufficient food, want of fresh air and light.

The chief defect in the bone is absence of the due proportion of animal and mineral matter, the mineral matter—lime salts—being

deficient, so that the bones are soft and yielding. Besides this, the process of development in the bones is more slow than is usual, and some stages of it are exaggerated, so that not only is there diminished quantity of lime salts, but also increased formation of the soft material, viz. cartilage cells When at last the bone salts begin to be deposited, the formation of bone is apt to advance with greater than normal rapidity, and to extend further than usual, so that the bone becomes denser and heavier than ordinarily.

CHIEF SIGN OF RICKETS

The chief sign of rickets is the deformity which the soft and yielding nature of the bones occasions. As soon as the child begins to walk, the bones of the leg are unable to support the weight of the body, and so bend outwards, The pelvis, similarly is crushed in by the weight of the backbone and its cavity narrowed. This is especially serious in *female* children, for the pelvis retains its contracted form up to adult life, and so may *obstruct or render impossible natural childbirth.* The chest may be deformed owing to the ribs yielding to the force of the muscles that take part in breathing. Thus the sides of the chest are drawn in and the front projected, and the pigeon breast is formed. The bones of the head also partake of the disease, producing the peculiarly large head and protuberant forehead, while the face is small and peaked. In addition, the spine may also be curved, the joints are large and prominent, especially those of the wrist and ankle, causing the appearance called by some people "double-joined," the growth over the whole body is generally stunted, so that the stature is small, the face is pale, and digestion imperfect. The child is often "potbellied," the soft spot on the top of its head in front is larger, and later in closing, than usual. Teething is also delayed as already remarked.

In its early stages, the disease frequently reveals its onset by the restlessness of the child during the night, a tendency to kick off the bedclothes. So sensitve is the whole body of the child that it strongly objects to being touched. About the age of fifteen the bones often become quite firm and a process of repair sets in, by which the hollows in the bones during the bending may become filled up. Thereafter the excess of bone may be absorbed, and so the deformity becomes greatly diminished.

TREATMENT

Treatment must be directed to improving the general health. This is to be accomplished by giving good and sufficient food, milk, animal food, raw eggs, by exercise, and by attention to the clothing to see that it is clean and warm flannel being preferred. Change of air and seabathing are very valuable. As to drugs, the best are cod-liver oil and chemical food, given three times daily in quantities to suit

the age of the child, and iron, of which the most suitable form is dialysed iron, 5 to 10 drops four times daily in water.

To prevent the growing deformity of the legs various contrivances exist. The simplest is a wooden splint well-padded and strapped on the outside of the leg from the thigh to the foot, which keeps the leg straight and strengthens it till it becomes able to bear the weight of the body. There are others more complicated, made of steel fastened to the boot, and jointed at the knee so as to permit of bending.

ULTRA-VIOLET RAYS

Treatment also consists in addition to good feeding in the administration in some form or other of ultraviolet rays. Probably the best form is exposure, under very carefully graduated conditions, to the sun's rays in a clear atmosphere. This is impracticable for many, and the ultra-violet lamp, or skilled hands, is the next best. Where these things are not obtainable, we can administer the anti-rachitic principle (sometimes called Vitamin D) in some form or other. Cod-liver oil is particularly rich in it and undoubtedly owes a great deal of its efficacy to this fact. There are also on the market a number of excellent preparations containing the D vitamin. None of these should be tried however before first consulting a doctor. Ultra-violet-therapy by way of the mouth is a much less dangerous proceeding than the exposure of the skin to the rays, while the difference in efficacy between the two appears to be very much less than was at one time suspected.

The best way to guard against rickets is to give the child from the very first plenty of milk, and not to be led into the fatal mistake of trying to feed the child on indigestible patent foods made of starch. If there is any difficulty in retaining the milk, it should be peptonised, or mixed with a third of its volume of lime-water.

If the legs are very much bent, all that is necessary is to prevent the child from running about for a few weeks, and they soon get straight again. The use of irons for crooked legs is a mistake, for they do no good, declare certain doctors.

The key-note to the situation is milk, cod-liver oil and fresh air. Where there is constipation, add a small quantity of extract of malt to the milk.

DESPERATE POVERTY

Dr. Drummond Shiels is reported to have stated at the Brighton Conference that "the India Office was aware of the *desperate poverty of the Indian people and hoped that the Whitley Commission would contribute towards mending this state of affairs.*" We wish we could share the optimism of the Under-Secretary of State for India. Unfortunately the

'desperate poverty' of the Indian people has its roots much deeper than Dr. Shiels seems to recognise. India is extremely rich in raw materials, the fertility of her soil is almost proverbial, her people are industrious and frugal, but notwithstanding all these factors in their favour the people of India are "desperately" poor. More than half the population of India, according to British historians, know not from year's end to year's end what a full meal is. They live in huts in which no European would care to keep his horse or dog; their clothes hardly help them to preserve decency, not to speak of affording them due protection against the weather; the majority of them are heavily in debt; they cannot afford to call in doctors or purchase medicine when they fall ill; malaria, cholera, influenza, and in fact, all sorts of preventible diseases exact heavy tolls from these desperately poor people annually. They have been taught to regard their wretched condition as the result either of their own *Karma* or as visitations of the Divine wrath.

Steadily and silently a change has, however, come over the spirit of the desperately poor people in India. They have been awakening to the consciousness that it may not exactly be the Divine will that a few of His children should roll in wealth and luxury while millions live in abject penury, without even the ordinary necessaries of life. This consciousness is, however, still in a more or less nebulous state among the Indian masses. The doctrine of Fatalism or *Karma* still exercises its influence over their mind and paralyses their energy to a great extent. Their will to economic freedom and their desire to rise above their environments occasionally receive an impetus from their patriotic countrymen who reveal to them how masses in other lands have improved their miserable lot by united action. They learn how the once despised and trodden British workers and peasants have slowly seized the reins of Government and are engaged, through constitutional means, in reorganising the entire economic and industrial system of their country. They are told how in Russia the oppressed masses have reorganised the economic and political system of their country in order to ensure the greatest happiness of the greatest number. The Labour unrest in India is largely due to the growing consciousness of the people that the problem of their "desperate poverty" can be effectively solved only by harnessing, as in England and Russia, political power to the solution of economic problems. The representatives of vested interests in India seem to understand this aspect of the Labour problem, and that gives, perhaps, a clue to the slogam of "Red" influence on Labour unrest in India.

The Bombay Chamber of Commerce in their representation to the Whitley Commission have asserted that "Bombay has still more serious labour troubles ahead by reason of the increasing importance of the political factor. During the past decade or more the Indian labourer

in Bombay has been gradually educated up to a higher standard of living.....Communism has stepped in and is busy encouraging him and organising him to demand that which he cannot earn and is not worth in the industrial market....." Evidently the educating up of the Indian labourer to a higher standard of living and encouraging him and organising him to demand a living wage is a heinous crime in the eyes of foreign vested interests. And when one remembers that it is these European Chambers which by reason of their economic power are real governors of India, one can easily solve the mystery of police activities against those who educate the Indian masses to a sense of their rights, and encourage and organise them to secure those rights. The European Chambers' mortal dread of "the increasing importance of the political factor" in the readjustment of the relation between Labour and Capital is also quite natural. They know it fully well that it is only so long as the Indian labourer will have no effective control over the machinery of administration that it will be possible to exploit him as well as the vast raw materials in this country. The European Chambers' vehement opposition to the Indian demand for full Dominion status has also no great mystery about it. As long as the Labour Government will rigidly follow, as they are doing, the Tory policy towards India, no uumber of Whitley Commissions will remove even a fringe of the "desperate poverty" of the Indian people.—*Liberty*.

TAP-WATER vs. RAINWATER

Which is Better?

(By Bernard Houghton)

Although the majority of people in cities drink tap-water, it must be remembered that this is quite a modern innovation, consequent on the development of the iron industry. Relatively to the time when men have lived on this earth, even wells are, as it were, but of yesterday.

It cannot have been much more than two or three thousand years, or as much, since tools adequate for well making were devised by even the most advanced people, and to this day all primitive people, make use of water from rivers or pools.

The human race on the other hand has a history of more than half a million years. It is this far-reaching background which we must always bear in mind. It is during this time, and before—for the organs of the higher apes are similar to our own—that man's body evolved to what it is. Certain it is that rain water was the only drink known to man (and his ancestors), until civilization was somewhat advanced, and that is very recent indeed.

CONTAMINATED WITH METALS

Our bodies are not adapted to the use of water contaminated with metals, which when present in large quantity, are, as iris diagnosis proves, deposited as foreign elements in various parts. Those who drink iron or sulphur water, for instance, have irides marked respectively with reddish brown or dark brown spots. Even if metals are not absorbed in sufficient quantity to cause markings, it seems reasonable to suppose that they do no good. That tap-water is at least slightly contaminated with iron appears from the fact that it cannot be used for accumulators. The latter require distilled water or rain water—otherwise the sulphuric acid forms sulphate of iron. Distilled water is not well suited for human consumption, if it is true, as asserted, that it has a bleeching action. Ladies who are particular about their hair, prefer to wash it with rain water, because the hair looks more glossy when this is used, and it is known to be best for ablutions generally. If for the skin, why not for the mucous membranes, which after all are only an internal skin ?

For the garden, horticulturists agree that rain water is preferable for watering plants.

GOUT CURED

The writer knows of a lady who suffered from gout when she used tap-water, the water being taken from a mountain spring, and conveyed to the house by a pipe two miles long. The symptoms stopped when she substituted water from a rocky pool in her grounds.

Nor is rain water difficult to obtain. All that is necessary is to instal a water butt under a gutter from the roof and to draw from that. Microbes in the water need not alarm any body, because the human body is entirely adapted to such microbes. It is not adapted to water contaminated with metals or with town sewage. —"Health For All."

SPREAD OF CHOLERA IN CALCUTTA.

—:o:—

How to Check

SOME PREVENTIVE MEASURES SUGGESTED

By Dr. A. C. Ukil.

Professor of Bacteriology, National Medical Institute, and Visiting Physician in charge of Cholera Wards, Chittaranjan Hospital.

I was greatly interested to read a few days ago in "Liberty" a report of the meeting of the Municipal Corporation on the subject of Prevention of Cholera in Calcutta. It seems that a good deal of confusion exists in the minds both of doctors and of the councillors who took part in the

[illegible] I have [illegible] Hospital and [illegible] years past. I [illegible] in understanding the problem [illegible]

WATER SUPPLY AND CHOLERA

Regarding the [illegible] of [illegible] in cholera [illegible] Summer months and another, a smaller one [illegible] them occur during the dry [illegible] of the year. [illegible] cutta is much the same in Summer as in Winter. [illegible] more severe epidemic occurs during the Summer [illegible] of leakage into the filtered water pipes must be taken as a rare event when actually some pipes burst. The leakage into the filtered water pipes occurs more frequently during the rains and is responsible for an increased incidence of dysentery and diarrhoea during the rainy season but not of cholera.

INSANITARY CONDITION.

There remain two other sources of water supply in Calcutta viz the unfiltered water taps and the 10,000 tanks within the Municipal limits of Calcutta. As Secretary of a Health Association in South Calcutta, I carried out certain investigations regarding the incidence of Cholera. The filtered water supply is absolutely inadequate in the Summer when people need more water. This induces them to use unfiltered water both for washing and for drinking purposes. The increased incidence of Typhoid fever during the hot months in Calcutta is due to this cause. It has been found that people who live in or near Bustees suffer more from Cholera. It is also known that there are very few filtered water taps and no unfilered water taps in the bustees, often accommodating thousands of people. In their attempt to get filtered water, the residents have beeu found often to assault each other. The inevitable result is that they use the so-called tanks for bathing and washing (clothes, kitchen utensils) etc.) purposes. The water of the tanks is liable to be thus polluted for two reasons—(1) owing to evaporation the water contains a higher proportion of organic matter and certain salts. This has been found to be very favourable for the growth of the cholera vibrios. (2) There is a fair percentage of "carriers" among the population and it has been found that the pollution of a tank occurs in direct proportion to the number of people getting into it. Besides, latrines are situated near the banks of a large number of tanks and I have a number of photographs in my possession showing the pollutiion of tank water from these latrines. Thus both "carriers" and an insanitary condition are responsible for the spread of cholera.

"ACTIVE CARRIER"

There is another very great defect in the matter of disposal of cholera cases in Calcutta. It has been found by us that when a patient recovers from an attack of cholera, he carries the germs in his bowels for from 2 to 3 weeks or more after apparent recovery and thus remains a very active "carrier" able to transmit disease for a veritable length of time. It is a practice with our hospital not to discharge a case after recovery unless the stools are found to be cholera-germ free, consecutively twice at an interval of 3 days. When a case is discharged, both the Health authorities and the Health Association, from whose jurisdiction the patient comes, are informed to enable them to take preventive measures. So far as I know, this practice is not followed in any other hospital in India. From a sanitary point of view it is very important that men still infected with virulent germs, though apparently cured, should not be allowed to move about in society at random.

In Calcutta the educated and the richer classes are closely connected with the people in the 'bustees' where the cooks, maid-servants and food hawkers reside. Hence their life also is constantly surrounded by danger of infection so long as those plague spots in the city are not cleaned.

HOW TO COMBAT IT

As actual measures for combating this disease, permanent and not spasmodic efforts should be made by the Health authorities. Investigations should be carried out to ascertain the cause and persistence of cholera epidemics during certain season of the year, inspite of the city's enjoying a filtered water supply. The course of each case should be traced out and prompt precautionary measures taken. In the present backward sanitary condition of the country, the inoculation of cholera vaccines once a year would undoubtedly diminish the number of cases, but unless the facilities for spreading the disease are stopped, the vicious circle would continue to act for a long time to come. To my mind, besides chlorinating the tap water, the following measures should be taken to prevent widespread epidemics in future:—(1) barricading all the tanks in the bustees of Calcutta, (2) ensuring adequate filtered water supply in the bustees, (3) opening convalescent wards for cholera patients where they should be detained till they are declared "vibriofree," (4) controlling the city's food supply and (5) health propaganda and preventive inoculations just "before" an epidemic. The whole question should be thrashed out by a committee of bacteriologists from the Health Department of the Corporation, the Government and other research workers who would guide the investigations.

VEHICLES OF INFECTIOUS DISEASES

Iced drinks and Kulpi-Baraf

(Ashesh Chandra Basu, B. A.)

I wrote about the useful properties of ice in my previous article and now I like to point out that ice is also a suitable medium for the transference of various disease germs. People generally think that bacteria cannot live in ice owing to extreme coldness. But that is erroneous, for bacteria are not generally killed in the freezing of water but they survive and are preserved in ice like living mummies for long periods. This has been proved by scientists like Schmelk, Bujwid, Heyrothin and others.

Schmelk closely observed bacterial life in the glaciers and ice streams of Norway and found them all alive in their icy abodes. Bujwid found in a cubic centimeter of melted hailstone as many as twenty-one thousand bacteria. Heyrothin experimented on the ice consumed in the city of Berlin and found in every cubic centimeter from 2 to 133,000 bacteria. Thus it has been conclusively proved that ice may contain many micro-organisms and living pathogenic germs which are beyond the knowledge of general public and often escape our notice. Bacteria may perish in freezing if they are continuously exposed from 2 to 3 weeks in a very high degree of refrigeration.

UNCLEAN METHOD OF STORING

Now is the question how artificial ice which is made from pure and portable water becomes infected with bacteria. In answer I would only draw the attention of our readers to the slovenly manner in which ice is handled by ordinary dealers and to the dirty place where it is stored covered with unclean rags or spoilt gunny bags. Often in the streets of Calcutta big blocks of ice may be seen lying on or being dragged along the foot-paths into the shops. It is moreover covered with saw-dust which is largely mixed with dust and dirts of the street. This saw-dust is often spread out in the sun on the footpaths and during this time they gather all the germs of infection. I have observed all these uncolean methods and have been induced to draw the attention of the public to it.

A WARNING

Thus, ice gathers all the germs of tuberculosis, dysentery, typhoid, diphtheria, influenza, cholera, small-pox, malarial remittent fever and various other disease germs from the dust and dirt in which it is often allowed to be kept by ignorant dealers. So I would request our readers not to drop ice into glasses or water jars as is generally done. Water should always be cooled indirectly in jars or other drinking vessels placed in ice box. It will of course entail some expense and a little trouble but

will save a lot of trouble that may otherwise ensue. In this way portable water may be cooled without being infected by bacteria or bacilli which are always carried by ice blocks like particles of dust in patches of clouds and detected under powerful microscope.

AN INSTANCE FROM AMERICA

There are several records of notorious ice infection in America, the metropolis not being excepted. In 1875 there was an outbreak of severe intestinal disorder in a summer resort in Newhampshire. Milk, meat, water, etc., were all examined and found free from any taint except ice which was polluted being taken from a small infected and frozen pond. Thus the cause was finally detected and attributed to ice which was served in cooling drinks. Another epidemic of typhoid broke out in Plymouth (Pen) in 1885 and was attributed to iced water. It was afterwards found out that dejecta were thrown upon ice which was used in the restaurants of the city. Several cases of typhoid also broke out in the city of New York in 1888. The ice supply of the city which was largely infected was held responsible for the out-break. Ice was then manufactured in the city from the water of the river Hudson into which flowed the sewage of Albany and other places.

KULPI-BARAF

All these are possible here in Calcutta in some way or other. Disease germs may appear in refrigerating tanks during the process of manufacture as these are often kept open and handled by the unclean hands of shabbily dressed coolies. The corporation of Calcutta sometime ago warned the public against taking "kulpi baraf" which gave rise to several sporadic cases of cholera and resulted in the death of several persons. They also analysed the *baraf* and discovered in it some of the bacilli mentioned above and disclosed some of the dirty processes of its manufacture with stale and highly polluted milk.

SHERBET AND ICED DRINK

In conclusion I would advise our readers to avoid the temptation of taking ice direct in glasses or sucking pieces of it. When I pass by shops where "sherbet" and iced drinks are sold I cannot help feeling that they are selling so many glasses of infection and catering in germs of various diseases. I think many cases of enteric fever in Calcutta are due to ice-creams which are served in restaurants and sold by petty dealers. I would further ask our readers to remember that ice is as much a vehicle of infectious diseases as milk of microbes and that bacteria are not always killed in refrigeration but preserved to be awakened into a revitalised future life in the warm current of human blood, like the phoenix of Arabia.

TREATMENT OF TUBERCULOSIS

Influence of Climatic Change

(By K. N. [illegible])

1. The regular [illegible] air life, is the fundamental [illegible] Suitable climatic environment makes [illegible] enjoyable.

2. When these essentials are assured, a change of climate is of definite value in a considerable number, probably the majority, of cases, but with the proper regime many cases will do well in any climate.

3. Any change of climate involving the fatigue of travel is contraindicated in acute cases with fever or haemorrhage, or in very far advanced and markedly debilitated cases. Absolute bedrest is the one essential here.

4. No patient should be sent away in search of climate who cannot afford to stay the reasonably expected time and to have the necessary food, lodging and care.

5. Competent medical advice and supervision are essential.

6. One of the most valuable asset of change is the education of the patient. This may of course, be obtained in a suitable environment without reference to climate, as in a sanatorium near home.

7. Selection of a suitable locality is an individual problem for every patient, depending upon his temperament, tastes and individual reaction to environment, as well as the character of his disease. The advising physician should have an appreciation of these as well as knowledge of the particular environment to which the patient is being sent Contentment and reasonable comfort are essential.

8. There is no universally ideal climate. For each patinet there may well be a most favourable environment if we are wise enough to find it.

9. There is a reasonable amount of evidence that certain medical types of cases are more favourably influenced by certain conditions of climate, everything else being equal. For example, reasonably cold, dry, variable climate, such as is found in the mountains for young or vigorous constitution which will re-act well. Dry sunny climate for laryngeal cases and those with marked catarrhal secretions. Equable, mild climates at low altitudes for the elderly and those of nervous temperaments, as well as for those with arteriosclerosis, weak hearts or marked tendency to dyspnoea.

10. Successful selection of climate and environment for cases of tuberculosis requires wide knowledge of human nature, of places and of the disease. This can only be acquired by patience, skill and experience.

—"The Indian Medical Journal."

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ANTIPHLOGISTINE

"Pain", to quote Romberg's famous dictum, "is the prayer of a nerve for healthy blood."

Certain nerves seem to be placed as sentinels by nature to warn of impending danger. These nerves, or sets of nerves are endowed with a greater susceptibility to inflammatory processes and cry aloud in accents of pain as soon as the organ as a whole feels the effect of the invading bacteria.

The observations of research workers have proved that under the influence of tropical moist heat, lymph circulation is materially increased and has for its direct effect—

(a) [illegible]

(b) [illegible]

(c) [illegible]

(d) [illegible]

Fresh blood contains nutritive elements, [illegible] immunizing bodies and enzymes. [illegible] permits a tissue drainage which [illegible] metabolism and functional products. A [illegible] away organic debris, exudates and extravasations.

For daily emergency practice, considering the advantages and disadvantages of all other therapeutic procedures, investigators and clinicians of international reputation have found that in order to prevent or to treat local inflammatory processes and to avoid the formation of pus as early as possible, Antiphlogistine covered with an impermeable membrane, will yield the best results, because it retains moist heat and need not be changed for a long time.

Reports of Societies, etc.

DAYANAND AYURVEDIC COLLEGE, LAHORE.

Copy of remarks by Mr. Asghar Ali, Asstt. Inspector General of Civil Hospitals, Punjab, who visited Dayanand Ayurvedic College on the 23rd January 1929 :—

I inspected the Dayanand Ayurvedic College Lahore today (23-1-29) and was shown round by the Principal and the two senior professors.

Buildings :—The building consists of four self-contained blocks, three for the College and one for the Hospital. The Block No. 1 is made up of 4 lecture rooms, a Science Laboratory and a Materia Medica Museum. The Block No. 2 is the Pharmacy department, where indigenous drugs, brought from all over India, are turned into powders, Tablets, Extracts, Essences and Tinctures, by means of machinery. The Block No. 3 is the Anatomical block, made up of a dissection hall accommodating 12 tables, a Lecture Theatre, a Museum, an Embalming room and a cold storage room. The Block No. 4 is the Hospital attached to the College and consists of an outpatient room, four indoor wards, each for 12 beds and an Operation room. Two of these wards are being used as hostels for students. There are Flush System Latrines and a Shower bath attached to the Indoor wards. The construction of these blocks cost the College authorities above a Lac of rupees besides the cost of land Rs. 77000. There is a small Library consisting of 377 books on the

various subjects taught in the College. The Lall Chand Library is also drawn upon, whenever necessary.

Staff :—The College staff consists of the following members, with their designations and honoraria shown against each :—

1. Pt. Surendra Mohan, B. A.	Principal and professor of Medicine and Physician.
2. Dr. Asa Nand ; M.B B.S. (P.U.)	Professor of Anatomy and Surgery, Pathology and Hygiene.
3. Dr. Shankar Dass, B.Sc. M.B.B.S (P.U.)	Demonstrator of Anatomy.
4. Pt. Durga Dutt, Ayurvedacharia.	Professor of Pathology.
5 Pt. Har Dial Vaidya Vachaspati	Professor of Pharmacy.
6. Pt. Murli Dhar. ,, ,,	Lecturer on Medicine for Junior Classes.
7. Kaviraj Jai Dev. ,, ,,	Lecturer on Materia Medica.
8. Pt. Vipra Bandhu. B A.	Professor of Chemistry.
9. Pt. Som Dutt. Vaidya Kaviraj	Demonstrator of Pharmacy.
10. Dr. Maharajh Krishan Kapur	Acts—as Honorary Surgeon, whenever a major operation is required to be done.
11. Kaviraj Kishan Dass.	House Physician.

No. of Students :—Altogether there are 118 students on the roll ; 43 in the first year class, 53 in the 2nd year, 13 in the 3rd year and 9 in the 4th year. Only Matric-passed students with Sanskrit as Secondary language of the standard of "Prag" are taken in ; the medium of instruction being Hindi.

Scholarships :—There are 13 scholarships awarded to the students ; 4 scholarships of the value of Rs. 5-7 in the first year class ; 4 scholarships of Rs. 4-6 in the 2nd year class ; three of the value of Rs. 5-6 in the 3rd year class ; and two of the value of Rs. 6 each in the 4th year-class.

The curriculum includes Anatomy and Materia Medica as chief subjects along with elaborate Pharmacy and only a smatterring of Pathology, Hygiene and Surgery. There are no arrangements for teaching Ophthalmology and Midwifery. The final examination certificates are awarded by the D. A. V. College authorities, without any intervention or control by the Punjab University, although, I am told the institution is a recognised one.

Indoor Hospital.—I saw of indoor patients in the Indoor-ward, one case of Colitis, 3 of Malaria, 2 of Enteric and one of Diabetes. All were fit cases for indoor treatment and were being well looked after. 20 out-patients had attended this morning. On an average 50 out-patients attend this dispensary daily and the daily average of indoor

cases is 6. There is also a Branch Dispensary for out-patients in the City, with a daily average of about 90 cases. No record is kept of the minor surgery done, but 15 major operations including Cataract, Piles, Tonsillotomy and excision of Tuberculosis glands were done during the last year. Mostly the work done is medical

No research work worth the name is being undertaken, beyond investigation of unidentified drugs.

There is sufficiency of drugs, clothing and bedding and a small supply of surgical instruments. There is no Kitchen proper, for cooking food for hospital patients, which mainly consists of preparing Khichri, rice and boiling milk, is done in an enclosure in the compound, with gunny bag curtains; a Kitchen is a necessity and should be provided when funds permit.

The Anatomy deparment depends for its supply of dead bodies on the hospital attached to the College as well as the unclaimed bodies in the districts of Sialkote, Gujrat and Lyallpur; but as an autopsy is compulsory in the case of all corpses discovered by the Police, they are not left in a condition fit for dissection purposes of the students, thus the College is being greatly handicapped for want of this material for the Anatomy department. The Principal has made a representation, in this connection for being allowed the use of unclaimed dead bodies in the Sir Ganga Ram Hospital, which are under the existing arrangements, sent to the Lahore Medical College; the resources of the Medical College are mani-fold, so far as the supply of corpses for its Anatomical department is concerned and the College can well afford to forego this small number, which I am told, seldom exceeds a dozen in the year. I shall see what can be done in the matter. . .

I was very pleased to go round the Dayanad Ayurvedic College and congratulate the management and the staff of the College, on their efforts to revive the ancient Ayurvedic system of medicine with the aid of the modern Medical Science.

SD. ASGHAR ALI
ASSTT. INSPECTOR GENERAL, CIVIL HOSPITALS.
23. 11. 29

Remarks by Hon'ble Malik Feroze Khan Noon, Minister for Local Self Government, Punjab, who visited Dayanand Ayurvedic College, Lahore at 11 A M on Thursday the 17th April, 1930, and was received and accompanied in the visit by R.B. Durga Dass, President, D. A. V. College Managing Committee, Mr. Mukand Lal M.L.C., Vice-President and Lala Har Gopal, Secretary.

"I visited the D.A.V. Ayurvedic College this morning at the invitation of the Managing Committee. I was much impressed by the institution.

I had no idea of its possessing such good buildings as it does. The Materia Medica Museum of Indian herbs and drugs was most interesting and has a great future before it. If research work in this line is carried on, on proper lines, it can prove of immense value to the country. The authorities are badly in need of Dead bodies for the teaching of Anatomy. The institution seems to possess good text books and I understand that usually only Matriculates are admitted. The shortage of students in the last 2 years Classes, I was told is due to the fact that after two years education, students get Certificate from the college and are able to go and earn living in the villages and do not return to the College for higher studies and others do not come because they cannot afford to stay on much longer,

Copy should be sent by the Principal to the Inspector General of Civil Hospitals, Punjab.

(SD.) MALIK FEROZE KHAN NOON,
MINISTER FOR LOCAL SELF GOVERNMENT, PUNJAB,
Lahore.

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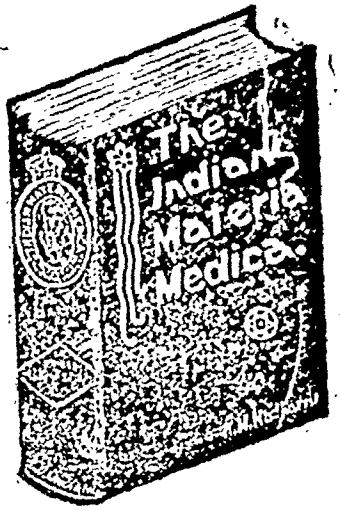

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